TECHNOLOGY DEPT.

TEXTILE WORLD

AUGUST • 1945

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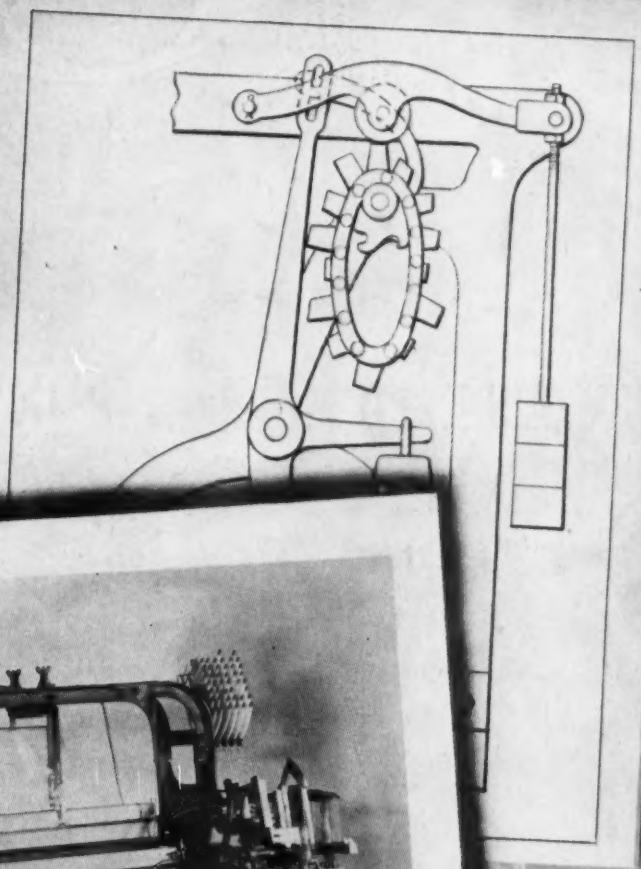

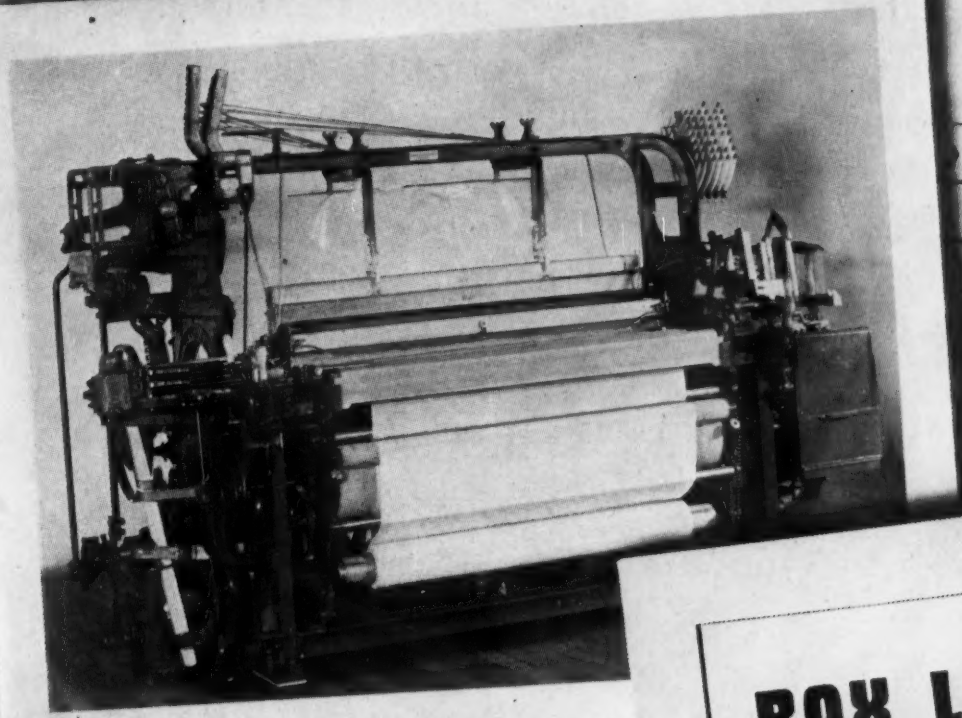

BOX LOOM
Centennial

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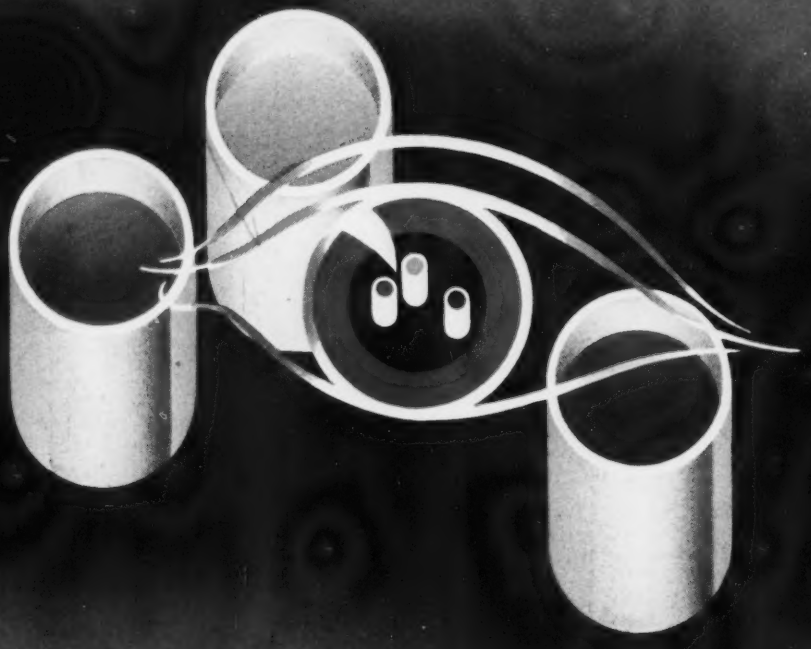

COLORS NEED MORE THAN EYE APPEAL

When normal times return, color will play an increasingly important role. For color gives life more interest, added zest.

But colors need more than eye appeal. Unseen merits are important, too. The proper selection and application of dyestuffs to obtain color fastness most suitable for the end product is a constant challenge. Our research facilities place us in an excellent position to assist you. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington, Del.

ONE PINT OF YOUR BLOOD MAY SAVE A FRIEND'S LIFE

Du Pont Dyestuffs

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT DYESTUFFS

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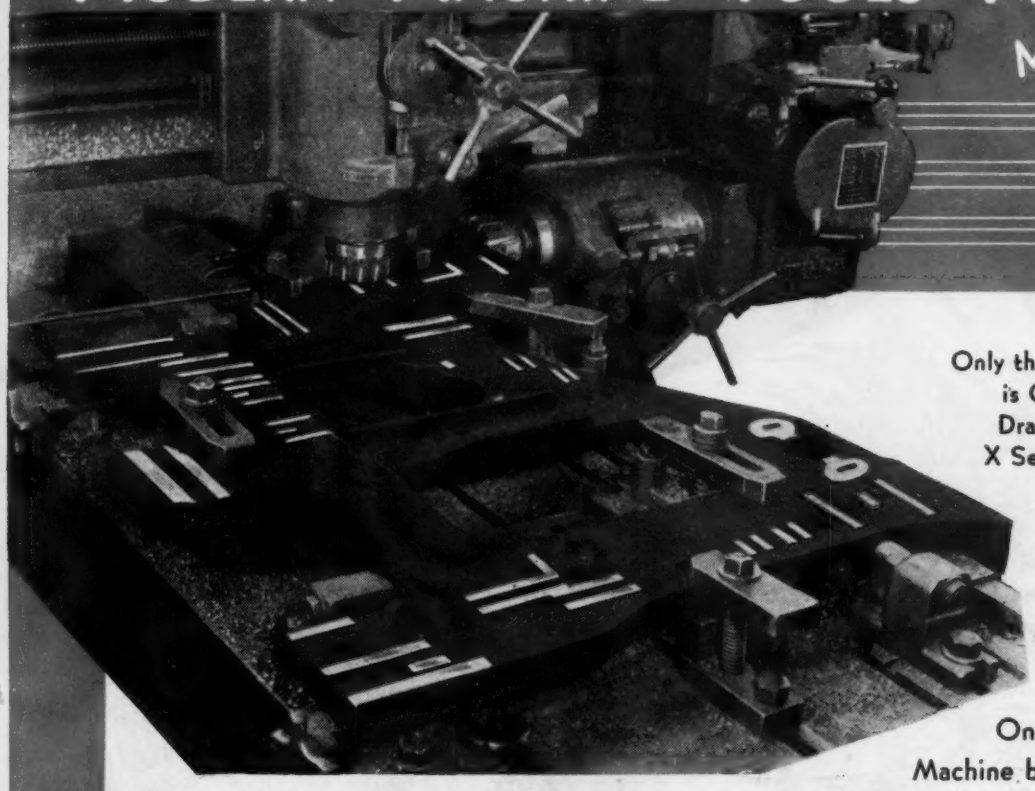
MODERN MACHINE TOOLS PRODUCE MODERN HIGH SPEED LOOMS



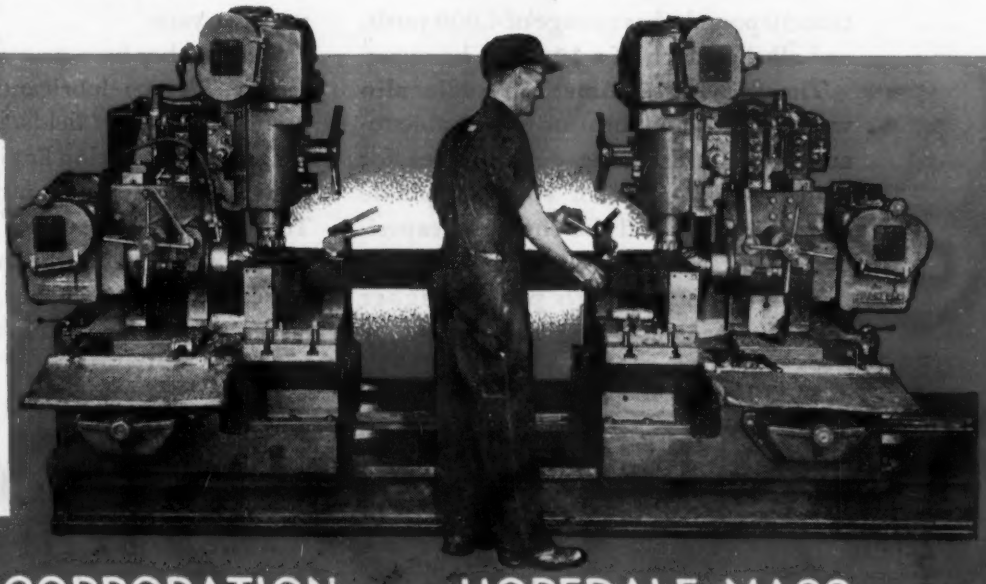
Only the Best of Machine Tooling is Good Enough to Meet Draper Requirements for X Series High Speed Looms

On this Machine, with its specially designed jigs and fixtures, horizontal and vertical surfaces of the Loomside are milled at the same time from a common base. The inner and outer milled surfaces are exactly parallel and all horizontal surfaces are exactly at right angles to the vertical surfaces.

This means that all parts assembled on the loomside will be in perfect alignment.

On the double-end Milling Machine below, both ends of girts and other lengthwise parts are milled both vertically and horizontally in a single operation thus insuring perfectly parallel ends and horizontal surfaces exactly square with the ends.

When these lengthwise parts are assembled with the loomsides, a perfectly square loom frame is the result.



A Square Loom Frame is the foundation for the precision-building of present day X Series Looms

DRAPER CORPORATION HOPEDALE MASS

BATTLE dress for this soldier includes the "super bazooka"—the Army's 4.5-inch rocket and launcher. This package of destruction weighs only a little more than 50 pounds, has a range of 4,000 yards, and all the punch of a 105-mm. howitzer.

The well-dressed American soldier also wears a battle uniform of tough, able-to-take-it cloth. Spinning quality yarns for uniform cloth calls for effective spindle lubrication . . . and the choice of experienced operators everywhere is Texaco.

Texaco Spindura Oils permit higher spindle speeds and heavier packages by cushioning against vibration, resisting hunting and lagging. They also resist oxidation and thickening, and assure more uniform tension and twist . . . a smoother, stronger yarn.

Because they have proved so effective in service, Texaco lubricants are definitely preferred in many fields.

Texaco Lubrication Engineering Service is available through more than 2300 Texaco distributing plants in the 48 States. Get in touch with the nearest one, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON EVERY SUNDAY NIGHT—CBS

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Classified According to Reader Interest

←MILL DEPARTMENTS . FIBER→ DIVISIONS

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THE Long-Range View

A SOLDIER Asks a Question

In an army hospital last month a TEXTILE WORLD editor talked optimistically to a group of soldiers on the opportunities for postwar jobs in the textile industry. In the questions-and-answers period, one of the audience remarked, "That is all very fine, but what about the time when production catches up with demand?"

Yes, what will happen? What will be the first step the manufacturer will take when news comes that the stock market has slipped, that this or that customer has decided to postpone buying until he sees how things are coming out, that this or that friend believes himself facing bankruptcy?

The manufacturer will, of course, curtail production, because he will be afraid that what he produces he cannot sell at a price sufficient to cover his costs. So he will throw people out of work, reduce the purchasing power of the country, and thus make certain that the depression gets under way, in its vicious downward spiral, as quickly as possible.

If the late President Roosevelt left any message for the American people, it was certainly his famous pronouncement, "The only thing we have to fear is fear itself." Many fears are conquered by taking out insurance against the risks on which the fears are based. Why not insurance to cover the cost of production?

TEXTILE WORLD suggested the possibility of such insurance on this page in March. The suggestion has met with varied reactions. Some of them seem worth recording and analyzing here.

Most opponents of the plan believe that it is "too colossal," as one of them specifically termed it. The job of setting up a suitable insurance carrier as a cooperative private enterprise and of managing such an organization would be too difficult, they say. But the war effort also was and is colossal and difficult. Perhaps the defeat of depression is as important to our future as the defeat of Germany and Japan—and worth as much effort.

Insurance men complain that experience has demonstrated the "impossibility" of insuring a so-called moral risk. These men are aware, however, that sometimes their customers successfully burn down houses to collect fire insurance; and they agree that if only some 80% of the cost of production were insured, the influence of the unscrupulous would be curbed. They also modify their attitude if it is agreed that no insurance be paid on any product or service sold below whatever figure is selected in advance as its normal cost.

Some insurance men complain that there is no precedent on which to base the premium, and the insurance carrier might go broke. What if it did fail? Should we be any worse off than if we had not given the idea a trial? There was no factual basis on which the War Damage Corp., for example, could base its premiums; but it is now wondering what to do with its huge reserve. There might have been an invasion of a part of the country which resulted in claims that completely drained the corporation's resources, but those who suffered loss would have got at least some money out of it.

Fear has been expressed that the insurance carrier would put too much power in the hands of those who would control it. These men would be able to refuse insurance to new enterprises and so prevent the natural expansion of industries. True, insurance could be refused; but what would prevent the new enterprises from starting up on their own without insurance, just as they are obliged to do today? As a matter of fact, a field in which there would be no chiselers selling below cost might be a particularly inviting field to enter—if, of course, the general profit outlook were inviting, too.

And finally, some are afraid that the insurance plan would prevent the natural shrinkage of an industry. It is true that shrinkage might be seriously retarded if the production of a particular item were insured indefinitely; but, as in all insurance, the policies would have to come up for renewal periodically—perhaps every year. Certainly, no interests would find it profitable to pay claims on an unsuccessful product or service indefinitely; and certainly no policy holder would find it desirable for long to continue producing an item which returned only its manufacturing cost, or less.

The textile industry did some pioneering in insurance in the last century, when New England mills banded together to cover their fire risks cooperatively—and thus laid the groundwork for one of the largest and most successful insurance organizations of today. This new job is too big for one industry to tackle by itself, but textile men could show the way.

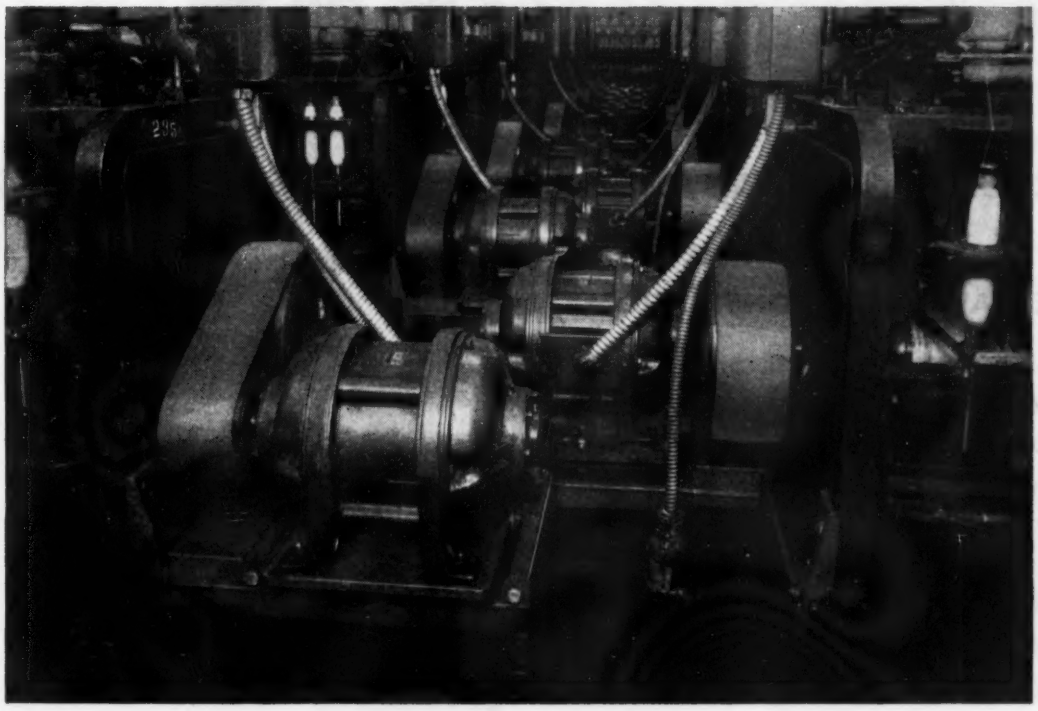
Edwin L. Fowle

Greater Drive Efficiency
. . . Larger Machine Output

Get both through

Automatically **CONTROLLED Belt Tension**

of TANNATE-ROCKWOOD SHORT CENTER DRIVES

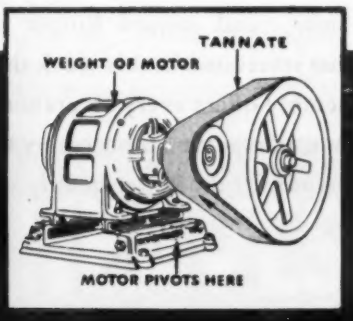


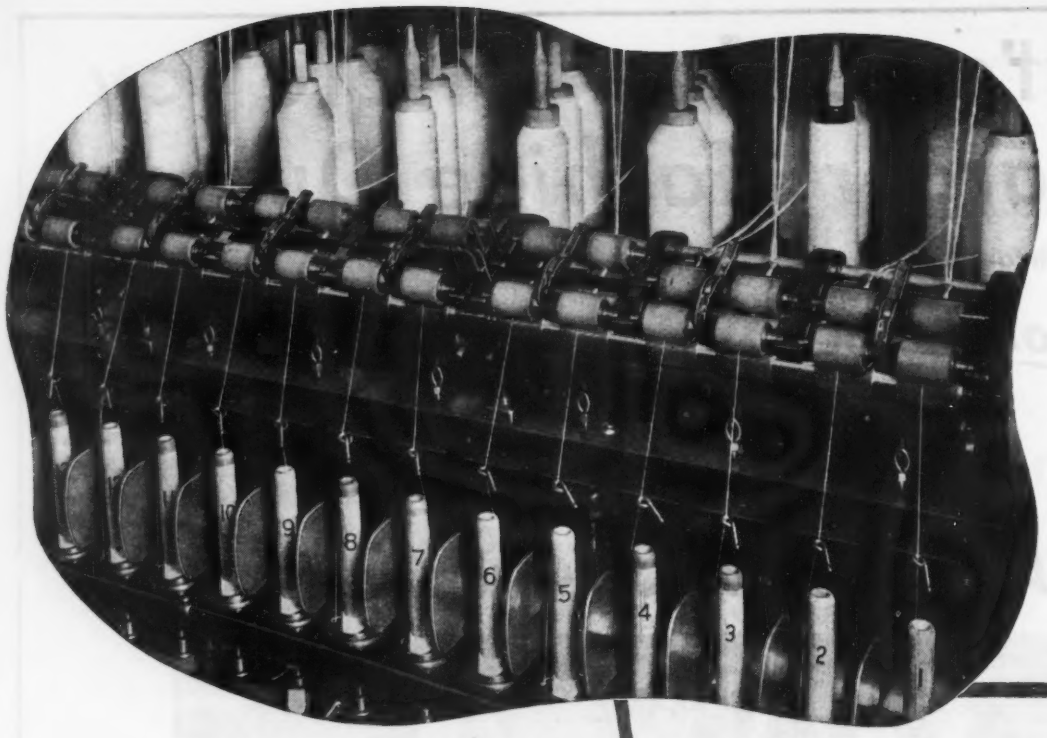
The weight of the motor on the pivoted Rockwood base keeps belt tension correct regardless of load variations thereby assuring the right machine speed and less bearing wear. In turn that results in more and steadier machine output. Tannate Leather Belting is unusually strong, has a firm pulley grip and is extremely flexible and long lived. Tannate-Rockwood Drives can be installed as floor, wall, ceiling or vertical drives with large or small motors. Write today for literature.

J. E. RHOADS & SONS, 35 North Sixth St., Philadelphia 6, Pa.

NEW YORK • CHICAGO • ATLANTA

RHOADS *Tannate-Rockwood* **SHORT CENTER DRIVE**





SPINDLES 1 *and* 2
1⅛″ combed Peeler

SPINDLES 3 *and* 4
50% cut wool top 1½″ staple
50% 3 denier viscose 1½″ staple

SPINDLES 5 *and* 6
50% 3 denier viscose 2″ staple
50% 3 denier acetate 2″ staple

SPINDLES 7 *and* 8
100% 3 denier Celanese 2″ staple

SPINDLES 9 *and* 10
25% 70's Aralac 2½″ staple
25% 3 denier acetate 2½″ staple
50% 3 denier viscose 2½″ staple

SPINDLES 11 *and* 12
50% 3 denier viscose 2½″ staple
50% 3 denier acetate 2½″ staple

SPINDLE 13
100% 64's wool top

"Extraordinary!"

COMMENT OF PRACTICAL MILL MEN WHEN THEY SAW THIS DEMONSTRATION

This impressive demonstration of the amazing versatility of the Model Z Drafting Assembly is another example of the advance engineering inherent in all Saco-Lowell equipment. While the Z system was designed primarily for processing longer fibres, both natural and artificial, it will function on 1⅛″ combed cotton . . . and is, therefore, suitable for any type of fibre from 1⅛″ to 3″.

In this demonstration several stocks were used to spin No. 20's yarn with 17 turns per inch on a 2⅛″ ring. Note that on the first four spindles which are running the shorter staples, the roll setting, which is closer than on the other spindles, is obtained by simply changing the position of the back top roll.

Today is the beginning of an era in which there is a definite trend toward longer fibres. To managements interested in this work the Model Z Drafting Assembly offers every assurance that they will have advanced equipment necessary to meet the growing demands for the better quality synthetic yarns.

A DEMONSTRATION THAT PROVES THE
VERSATILITY
OF THE SACO-LOWELL MODEL Z DRAFTING ASSEMBLY

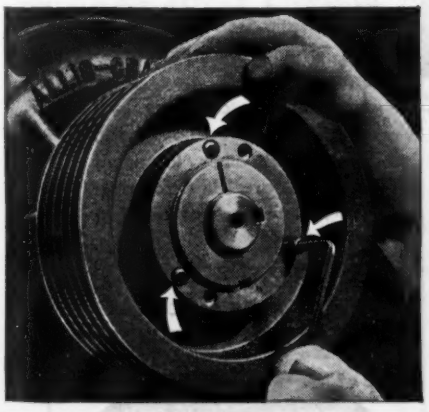
Saco-Lowell Shops

BOSTON, MASSACHUSETTS • Charlotte, Greenville, Atlanta

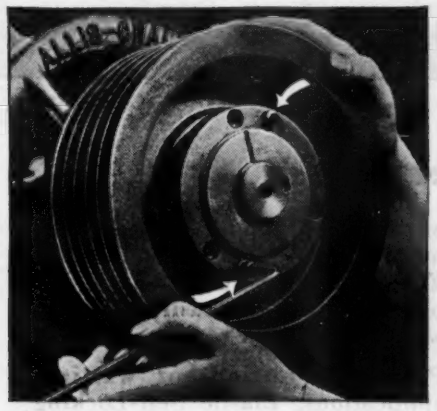
Changing was a job for but now could do it

No bulging muscles needed! Allis-Chalmers' new "Magic Grip" — *fastest mounting and demounting sheave on the market* — slides on and off *easily!*

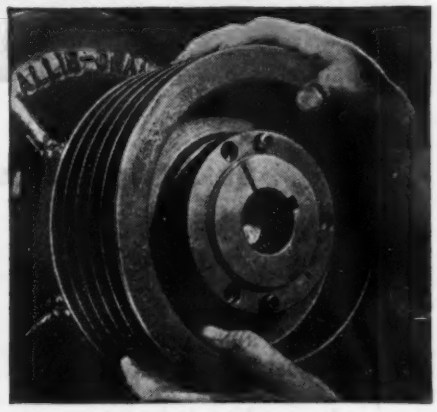
SEE HOW QUICKLY AND EASLY THIS SHEAVE COMES OFF THE SHAFT



1 **Remove three capscrews** from bushing collar. A handy wrench — supplied with each sheave — is the only tool needed to remove Allis-Chalmers' new "Magic-Grip" from motor or machine shaft quickly and easily.



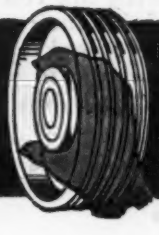
2 **Insert two capscrews** in tapped holes. As screws are turned, they become levers . . . automatically breaking tight grip of tapered split bushing on sheave and shaft. Entire unit is then ready for removal.



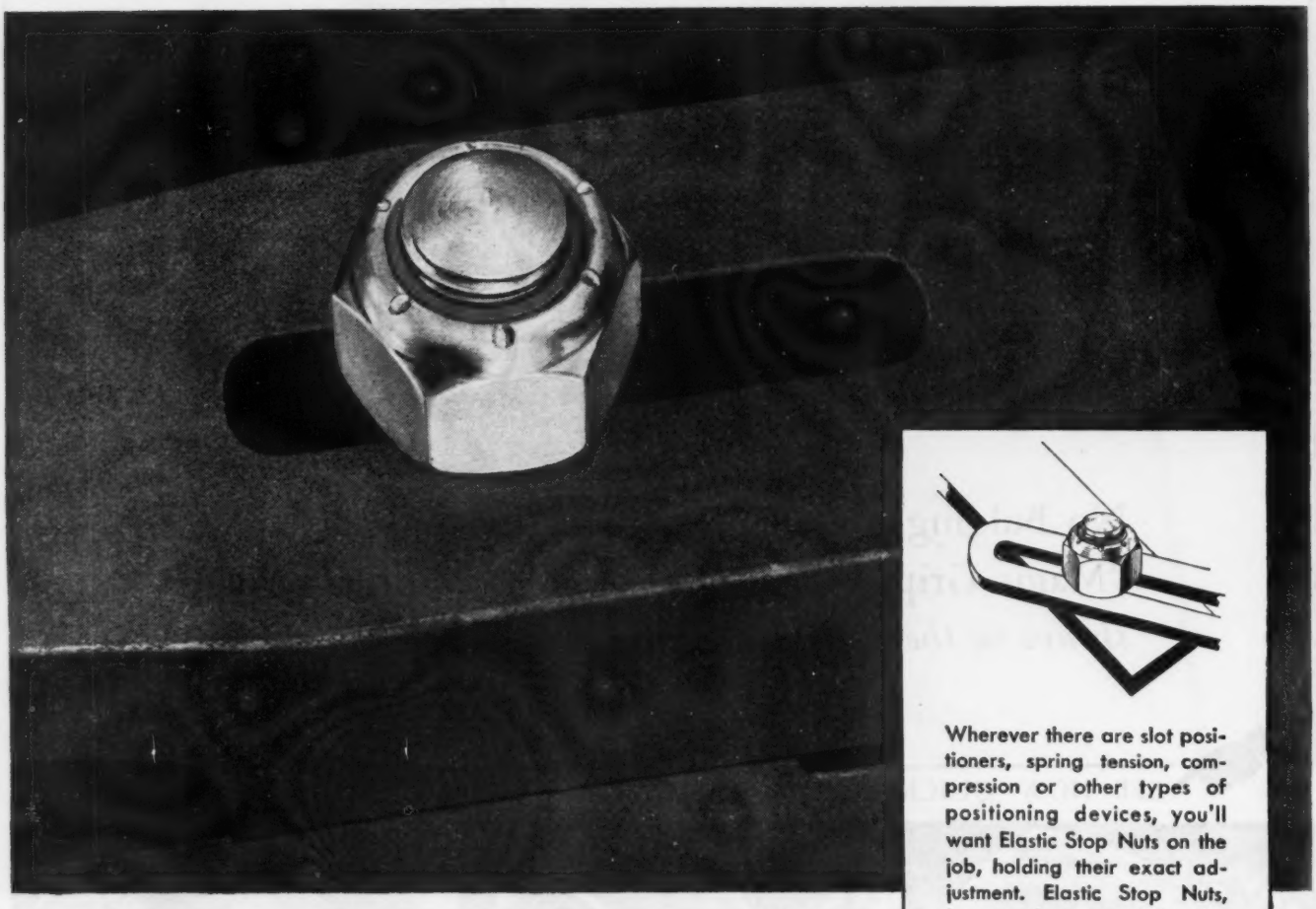
3 **Remove sheave from shaft.** Requires no mallet, no prying, no bulging muscles. You just slide the sheave off . . . smoothly, quickly. *It costs nothing extra!* Send for B6310. Allis-Chalmers, Milwaukee 1, Wis.

A 1856

Allis-Chalmers Texrope

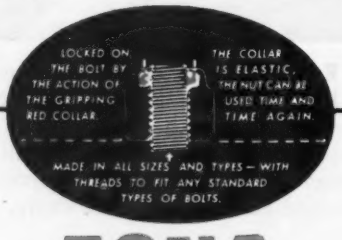
"MAGIC-GRIP"  SHEAVES

THIS NUT *Knows its place*



Wherever there are slot positioners, spring tension, compression or other types of positioning devices, you'll want Elastic Stop Nuts on the job, holding their exact adjustment. Elastic Stop Nuts, because they successfully resist the effects of vibration, shock, impact and other loosening influences, are ideal for positive maintenance of position.

LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY


LOCKED ON THE BOLT BY THE ACTION OF THE GRIPPING RED COLLAR
THE COLLAR IS ELASTIC. THE NUT CAN BE USED TIME AND TIME AGAIN
MADE IN ALL SIZES AND TYPES — WITH THREADS TO FIT ANY STANDARD TYPES OF BOLTS.

ESNA
TRADE MARK

It Stays Where It's Put

You'll always find the Elastic Self-Locking Stop Nut where you place it, because this nut always stays put. The Elastic Stop Nut holds an adjustment with a sure grip whether seated against a surface as in the slot positioner illustrated above or unseated on a threaded part.

The Elastic Stop Nut uses its head —because built into it is a red collar. This is an elastic compression collar that molds itself to the individual threads of the bolt, locking tight.

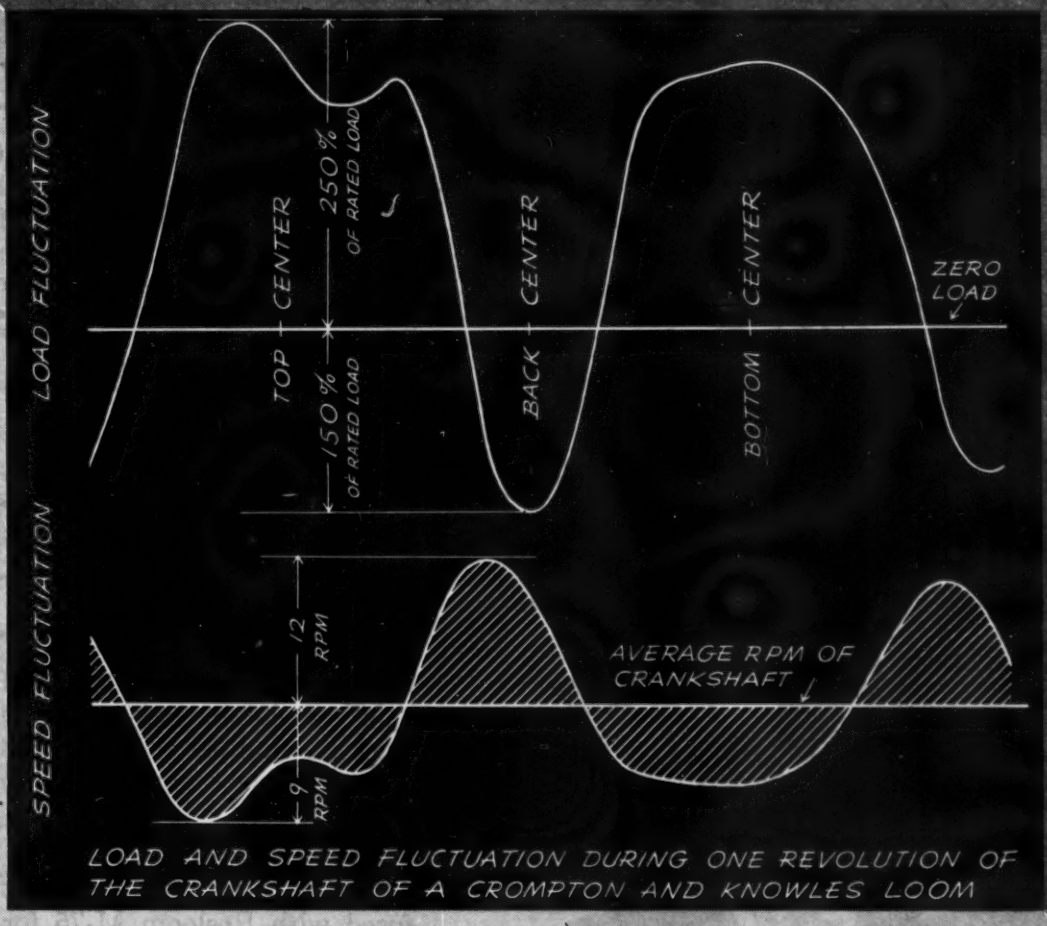
You need no jam nuts, cotter pins or other locking auxiliaries when you use Elastic Self-Locking Stop Nuts. They refuse to loosen, creep or "back off" under the toughest, most critical operating conditions. Yet they never rust or freeze in place and can be easily removed when necessary.

Proved in billions of wartime applications, Elastic Self-Locking Stop Nuts give definite insurance against loose nuts and consequent delays, breakdowns and extra maintenance work. From delicate, precise aircraft installations to heavy-duty tank installations, these nuts with the red elastic collar have shown their gripping power. Elastic Self-Locking Stop Nuts are the sure way to greater safety, economy and reliability.

ELASTIC STOP NUT CORPORATION OF AMERICA

Plants at: Union, New Jersey and Lincoln, Nebraska

Sales Office: 1060 Broad Street, Newark 2, New Jersey



LOAD AND SPEED FLUCTUATION DURING ONE REVOLUTION OF THE CRANKSHAFT OF A CROMPTON AND KNOWLES LOOM

These Two Conditions have always been "in the dark"

. . . UNTIL SPOT-LIGHTED BY C&K RESEARCH

Look at a C&K Loom in operation and you'd say: "Steady as clockwork." And you'd be right. There's no doubt, from the mill man's standpoint, that the loom is operating smoothly, at uniform speed. But, *instantaneously*, things happen in a loom that are beyond human powers to observe or comprehend.

Last month, in these pages, we discussed the violent load-fluctuations imposed on loom motors and clutches because of inherent characteristics of the machine. Now we'll show you something of "what goes on."

The curves above were plotted from a recording oscillograph. They indicate that the power put into a loom may be as high as 250% of the rated load. And the *power put into the motor by the loom* may be as high as 150%.

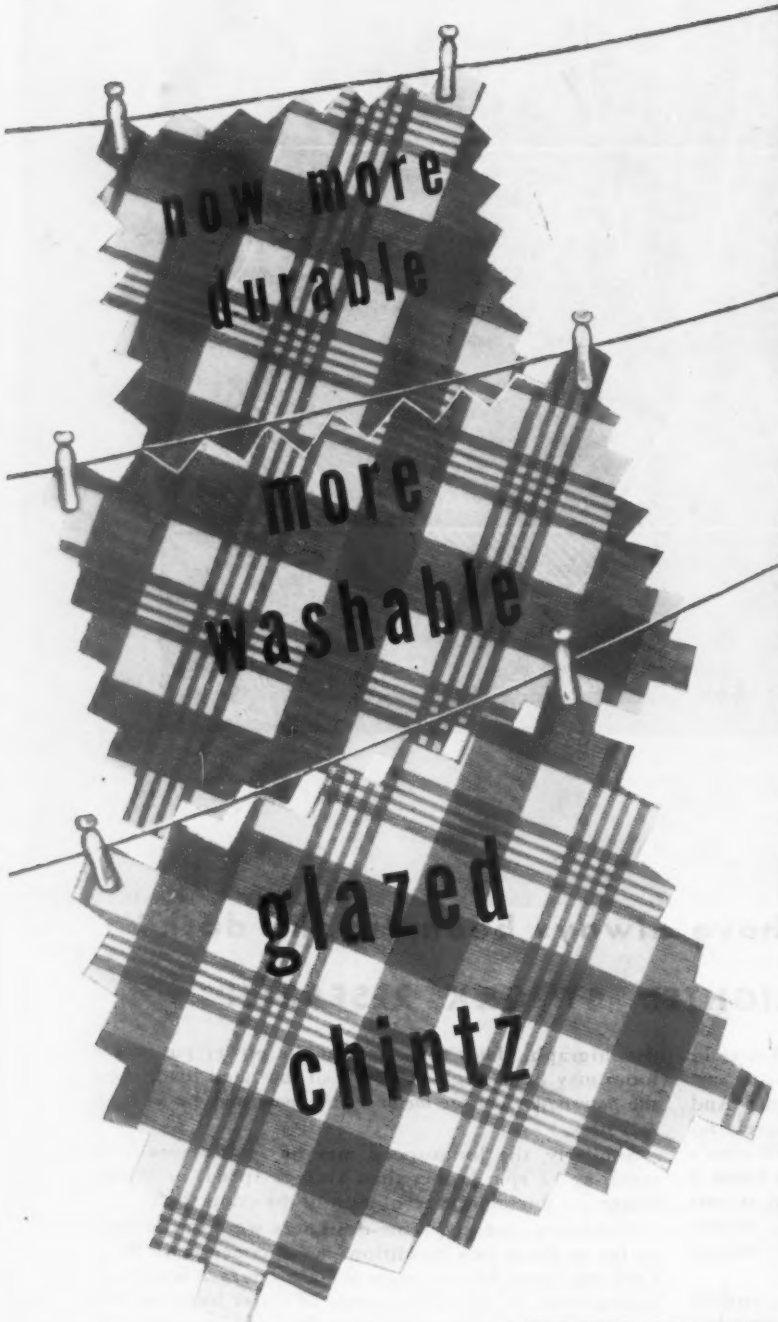
Similarly, the loom-speed may be *instantaneously* as much as 12 rpm higher than average speed, or 9 rpm lower . . . during one revolution of the crankshaft!

Until very recently, loom-designers were in the dark as far as these two conditions were concerned. Now C&K engineers have brought to light *new facts* which are aiding them in the development of better loom motors and clutches. And in every other field of loom research, too, C&K is employing new tools and techniques to bring you—step by step—better looms that will help you to weave more yardage of higher quality at lower cost.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms



Your glazed chintz now can take on new, longer life and new sales vitality with the introduction of this new Monsanto melamine resin finish, Resloom *NC50. Here are the new standards it provides:

1. IMPROVED WASHABILITY. Chintz glazed with this new finish withstands more frequent washing than finishes based on older and less stable resins.

2. BETTER COLOR RETENTION. The transparent luster of the Resloom glaze is retained without yellowing or dulling.

3. WIDE VERSATILITY. This new melamine finish can be used with a number of different formulas to meet varying requirements.

This new Monsanto finish (not to be confused with Resloom M-75 for shrinkage control) is supplied as an unpolymerized resin in water solution. Its permanent glaze is applied by standard equipment by (1) impregnating the dyed or printed cloth with the resin, using a padder, (2) and glazing at temperatures up to 500° F., (3) then setting at 300° F.

Complete Information Available

If you would like to know more about this new finish and the new washability and durability it offers . . . and particularly, if you would like a detailed report on on how Resloom NC50 can be adapted to your glazing operations or products, write, wire or phone: MONSANTO CHEMICAL COMPANY, Textile Technical Service, Everett Station, Boston 49, Mass.

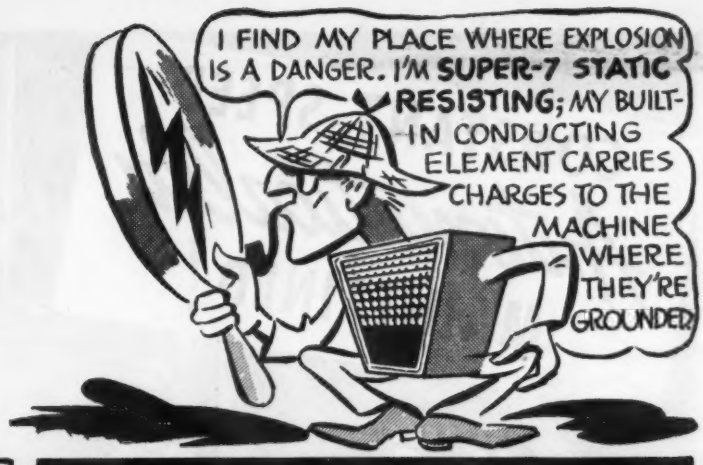
Reg. U. S. Pat. Off.

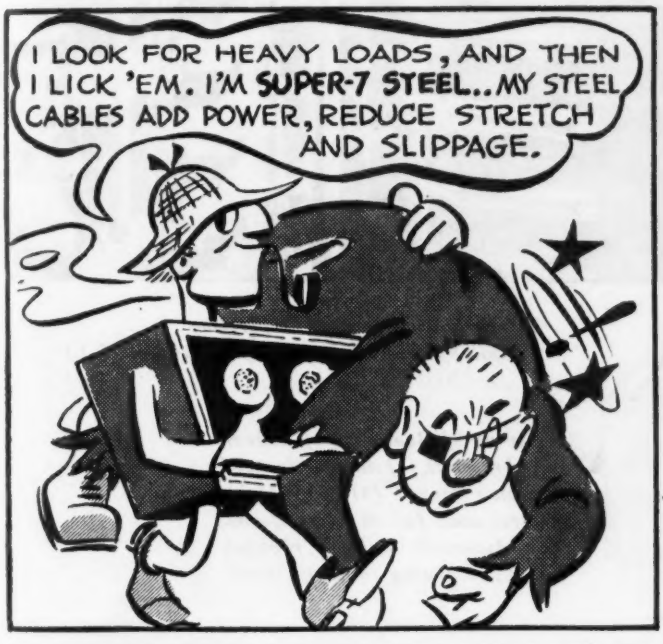
The Textile
SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO
CHEMICALS AND PLASTICS

LOOKING for TROUBLE!

Designed to stand up in trouble spots, America's newest and widest line of V-belts — Allis-Chalmers' Texrope — solves every one of these drive problems


I FIND MY PLACE WHERE EXPLOSION IS A DANGER. I'M SUPER-7 STATIC RESISTING; MY BUILT-IN CONDUCTING ELEMENT CARRIES CHARGES TO THE MACHINE WHERE THEY'RE GROUNDED



I TAKE THE TOUGHEST OIL ASSIGNMENTS. I BATHE IN GRIMY LIQUIDS, AND DON'T MIND AT ALL. I'M SUPER-7 OIL-PROOF... SOLID NEOPRENE!
A 1862

IT PAYS TO MAKE **ALLIS-CHALMERS** YOUR

V-BELT DRIVE HEADQUARTERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

CONSTANT SPEED *Automatically* MAINTAINED!

V★S-equipped Beamer in operation {Built by Robert Reiner, Inc., Weehawken, N. J.}

Close-up of Beamer: {1} Linear speed rheostat. {2} Adjustable-speed Reliance Motor. {3} V★S Drive control unit. {4} Magnetic panel. {5} Automatic build-up rheostat, for maintaining constant speed.

The *smooth* starting, stopping and speed changing and the exceptional ease and flexibility of control provided by Reliance V★S Drive in a wide variety of textile mill installations are important and recognized V★S advantages.

In addition, many special performance features can be incorporated to meet particular conditions. A good example is the V★S-equipped Reiner Beamer, where, by means of an automatic rheostat, a predetermined surface or linear speed is constantly and automatically maintained as the diameter of the beam increases.

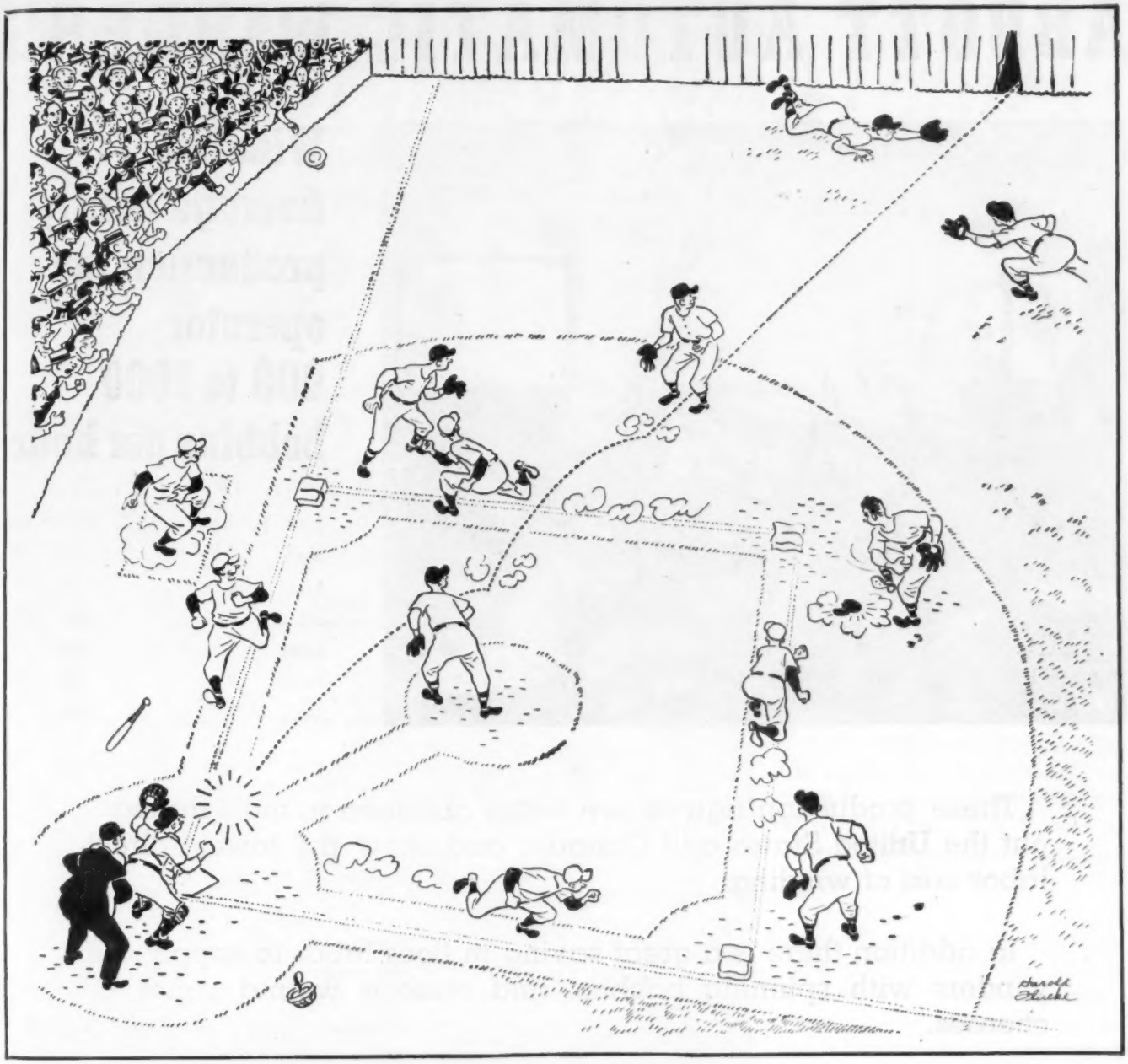
Reliance V★S Drive is an all-electric, adjustable-speed drive, operating from AC circuits. Its possibilities in helping to increase output and improve quality and uniformity of textile mill production have been demonstrated repeatedly. To fully appreciate these possibilities, you should talk with a Reliance Application Engineer. Just write or phone the nearest Reliance office.

RELIANCE ELECTRIC & ENGINEERING CO.
1086 Ivanhoe Road • Cleveland 10, Ohio

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S. C.) • Houston • Kalamazoo • Los Angeles • Minneapolis
New York • Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis • San Francisco • Syracuse • Washington, D. C. • and other principal cities

RELIANCE A·C D·C MOTORS

"MOTOR-DRIVE IS MORE THAN POWER"

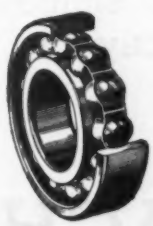


Nothing Rolls Like a Ball . . .

. . . and Pipsqueak O'Shay has just applied that principle in a manner which wins ball games!

That same fundamental fact—"Nothing Rolls Like a Ball"—is the difference between *ball* bearings and any other type bearing. Throughout war and industry, New Departure Ball Bearings are proving their unique fitness for our new world of higher speeds and heavier loads.

For the simple device of carrying the loads on a circle of tough steel *balls*, rolling freely in precision-ground raceways, has been the answer to many a 64 Million Dollar Question.



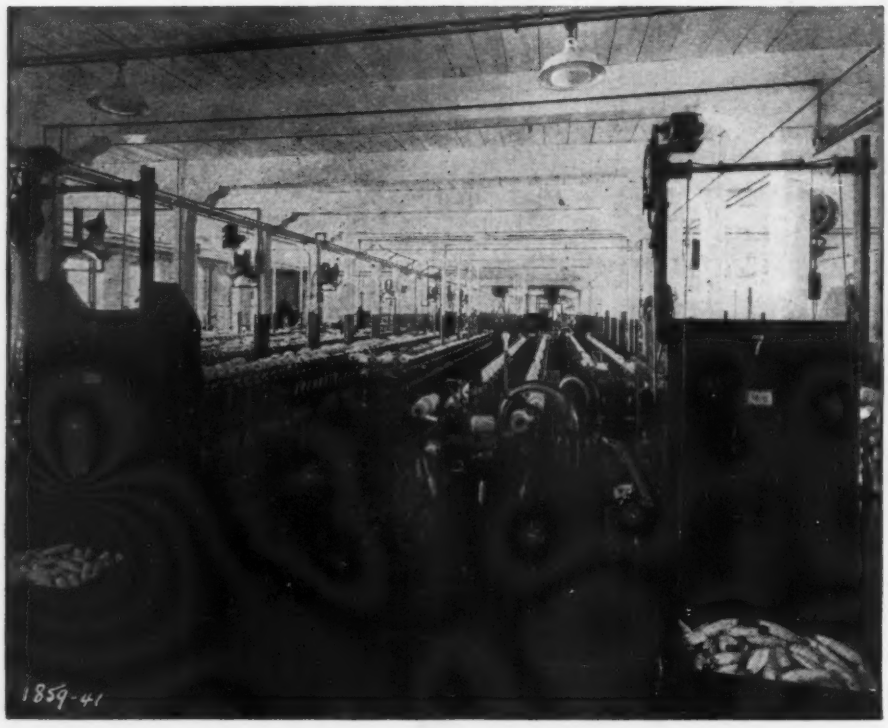
We believe no other bearing has as many—and varied—advantages as the *ball* bearing. Particularly the ball bearing backed by the technical skill and the wide experience of New Departure. 3377

There is more for you in a New Departure ball bearing than steel and precision. Advanced engineering and a desire to serve are tangible plus values.

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN. • Branches in DETROIT • CHICAGO • LOS ANGELES and Other Principal Cities

ABBOTT AUTOMATIC WINDERS



Winding Average hourly production per operator 900 to 1000 bobbins per hour

2-oz.	Bobbin	112 lb. hr.
3-oz.	"	169 " "
4-oz.	"	224 " "
5-oz.	"	280 " "
6-oz.	"	338 " "
7-oz.	"	380 " "
8-oz.	"	448 " "

These production figures are being obtained in mills throughout the United States and Canada, and show the lowest direct labor cost of winding.

In addition there is a great saving in floor labor to supply the winders with spinning bobbins and remove wound cones or cheeses.

Supply bobbins are dumped by the doffers into a box at floor level. A lever is pushed and the box is lifted and dumped automatically into a big hopper. These are large enough to eliminate any other storage of yarn. There is no trucking of yarn up and down winder alleys and distributing it along the machines. It is all fed in at one point. Similarly cones are all doffed at end of winder, and move directly into warper creels or to twisters or automatic quillers.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

Yes, Men Make Motors!

NO MACHINE KNOWN can duplicate the skill of Sam Meister, left, of Allis-Chalmers Norwood Works.

Holding an acetylene torch in his right hand, a silver alloy rod in his left, Sam silver-brazes end connections of Allis-Chalmers' "Indestructible Rotor."

Round and round the connections he works — expertly flowing in molten alloy to form a joined structure that can withstand as much heat as though it were a single die-casting.

No machine can do that job — and no machine can fully test how well it is done.

There's only one test . . . wait 5, 10, 15 years and *see.*

And that's the test in which Allis-Chalmers motors have proved over the years that they're *great* motors. That's why you hear it said so often: *"You can depend on Allis-Chalmers Motors!"*

• • •

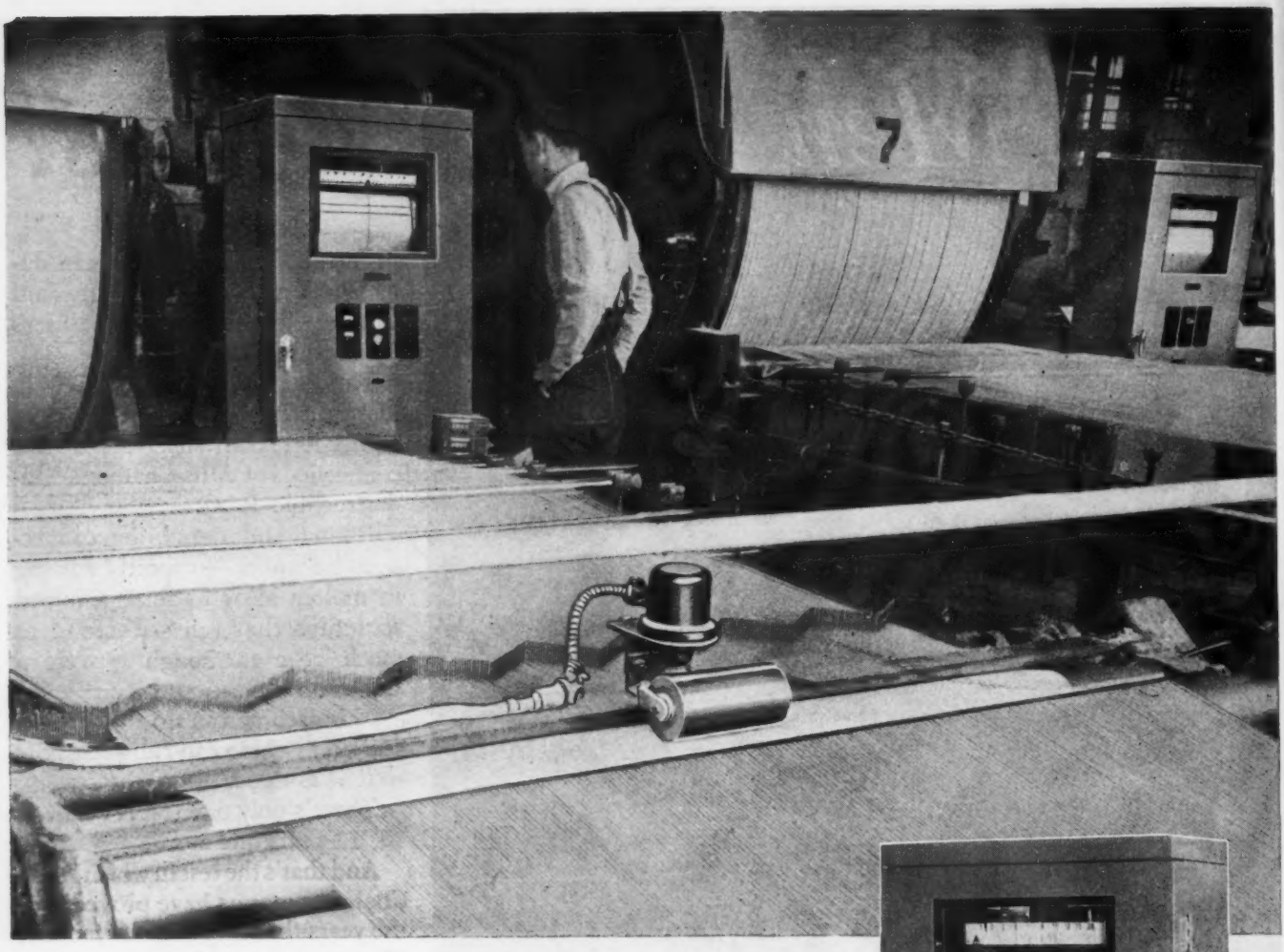
YES, HUNDREDS of Allis-Chalmers men—craftsmen like Sam Meister — know they have a big personal stake in every Allis-Chalmers motor. When they build a great motor for you, they're making a *friend* . . . and they know that's something no company and its workers can have too many of.

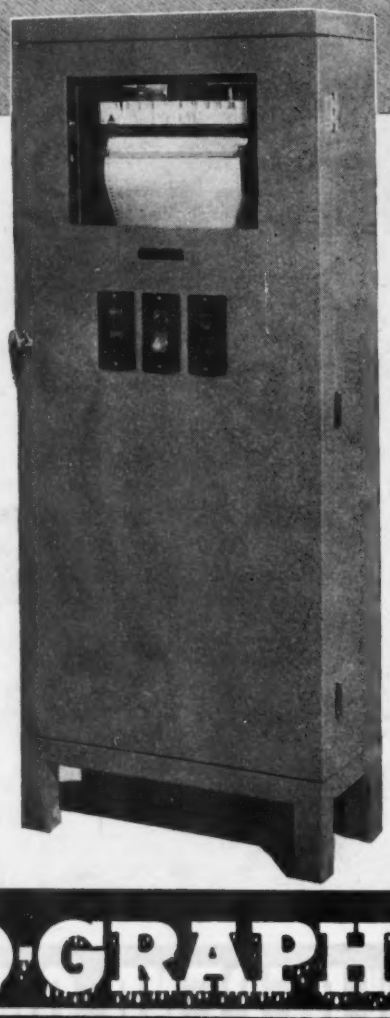
Next time *you* need great motors contact our district office. Or write direct to ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

A 1730

A-C VICTORY PEACE

YOU CAN DEPEND ON ALLIS-CHALMERS MOTORS





HOW WET IS YOUR WARP?

Where warps are running too *dry* or too *wet* the Brown Moist-o-graph slasher controller eliminates guesswork.

To produce a warp containing correct moisture content slasher operators set the control instrument for any desired regain to meet specific weave room requirements—thus every warp goes to the loom containing the correct moisture content. No wet warps. No baked or overdried warps. Fewer broken ends—less shedding and chafing in the loom.

The Brown Moist-o-graph slasher controller is calibrated in terms of "moisture content" which is controlled and recorded in percentage regain on the instrument chart.

The scale plainly visible up to a distance of 50 feet makes checking extremely easy.

Where the Brown Moist-o-graph slasher control system is installed results show—a better weaving warp—increased weave room production. More uniform fabrics.

What the Moist-o-graph is doing for others it can do for you.

Write THE BROWN INSTRUMENT COMPANY, a division of Minneapolis-Honeywell Regulator Company, 4509 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada; London, England; Stockholm, Sweden.

BOSTON, MASS., 799 BEACON ST. *ATLANTA, GA., 4 NO. RHODES CENTER*

BROWN MOIST-O-GRAPH

To Measure and Control is to Economize

SANDOZ PRESENTS *The color achievement of the month*

Deep Jade BY CHENEY

A century-old tradition for fine fabrics and a progressive attitude toward styling and manufacturing methods make Cheney Brothers a most highly-respected name in textiles... and make their products—like this silky corduroy Mandarin-type jacket — important to quality-wise women the country over.

Color — with Cheney, as with other manufacturers whose names are foremost in fabrics — is a vital element in sales appeal . . . and, in color, Sandoz is the name that represents reliability and progressive ideas.

"Thinking ahead with textiles," Sandoz chemists keep one eye on the fashion world, another on the technical requirements that accompany the introduction of new types of yarn, new fabric constructions, new textile manufacturing methods.

Highly decorative effects in fashion merchandise often call for brilliant colors . . . colors that dare to be as different as the Sandoz colors — Chloramine Brilliant Orange RS, Chloramine New Blue 5B, Chloramine Yellow R and Chloramine Fast Scarlet GFL.

For your convenience, Sandoz application laboratories are located in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto. Stocks are maintained there in a wide range of acid, chrome and direct dyes as well as auxiliary chemicals for all natural and synthetic fibres. Other Sandoz branches are in Chicago, Paterson and Providence.

Next month, this Sandoz series will salute another of its customers among the leaders in the American textile industry.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SAND *thinks ahead with textiles* S SANDOZ

CONES WITHOUT COBWEBS FROM MACHINES WITHOUT CAMS

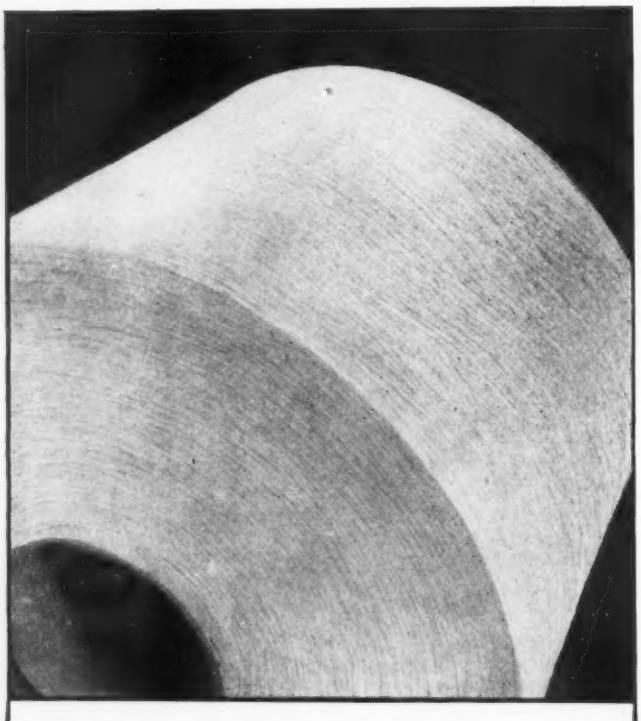
It's the Rotary Traverse — principally — that makes a yarn mill's *customers* delighted with their cones . . . and the yarn mill itself delighted with the lower costs of production.

The Rotary Traverse is an exclusive feature of the Roto-Coner* . . . a smooth, one-piece combination driving drum and traverse guide that helps produce knitting cones of superior quality at highest rates of output.

The Rotary Traverse may also be furnished with different groove arrangements to wind warping cones, dyeing packages and parallel tubes for twisting. Universal Winding Company, Providence, Boston, Utica, Philadelphia, Charlotte, Atlanta.

*Reg. U. S. Pat. Off.

23. 5. 16

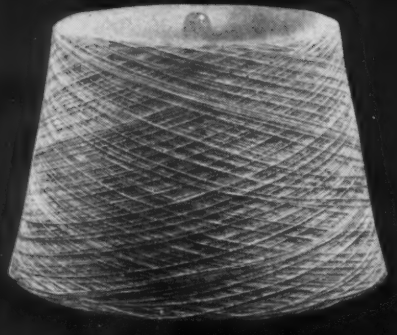


QUICK YARN REVERSAL MEANS FREE DELIVERY

The groove in the Rotary Traverse is designed to reverse the yarn quickly — without dwell — at both ends of the traverse, overcoming any tendency for the yarn to build up and roll inward to form stitches, underwinds, cobwebs. Yarn delivers freely from Roto-Cones without plucks or yarn sloughing off.

HIGHER WINDING SPEED WITH NO RECIPROCATING PARTS

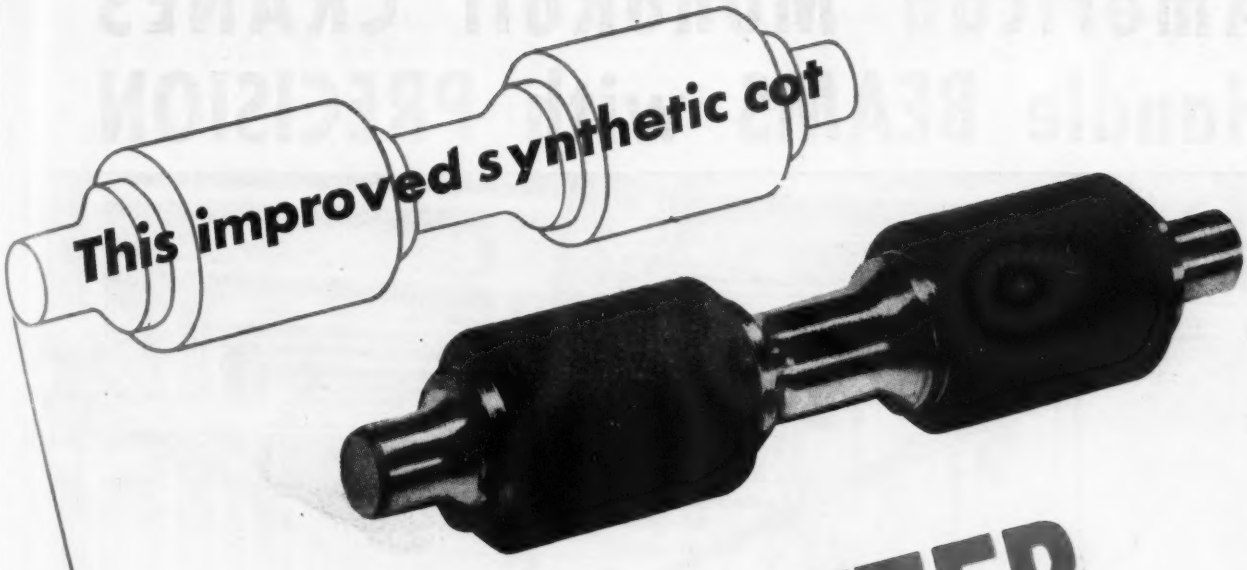
On the Roto-Coner* there are no cams to restrict winding speed. When equipped for paper coning, the Roto-Coner* operates at 550 Y.P.M. Elimination of cams and other fast-wearing reciprocating parts means a saving in maintenance cost — which, on the Roto-Coner*, runs less than ½ of 1% on investment cost per year.



ROTO-CONER* LEESONA REG. U.S. PAT OFF.

Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING



DRAFTS BETTER

...because it retains its excellent grip longer

DURING the past three years Armstrong's Accotex Cots have proved in hundreds of mills that they draft better than any other synthetic cot. Their superior performance is due to the specially formulated cork - and - synthetic - rubber composition of Accotex Cots. This material is highly resistant to "slicking up" which means Accotex Cots retain their excellent grip longer... produce higher quality yarn.

What's more, textile men have found that these improved roll coverings provide the seven additional advantages listed below. Check this list and you will see why Accotex Cots are now serving more spindles than any other synthetic cot, according to recent mill surveys.

Prove these advantages in your own mill. For samples, prices, and complete information on Accotex Cots, see your Armstrong representative. Or write direct to the Armstrong Cork Co., Textile Products Dept., 8308 Arch St., Lancaster, Pennsylvania.

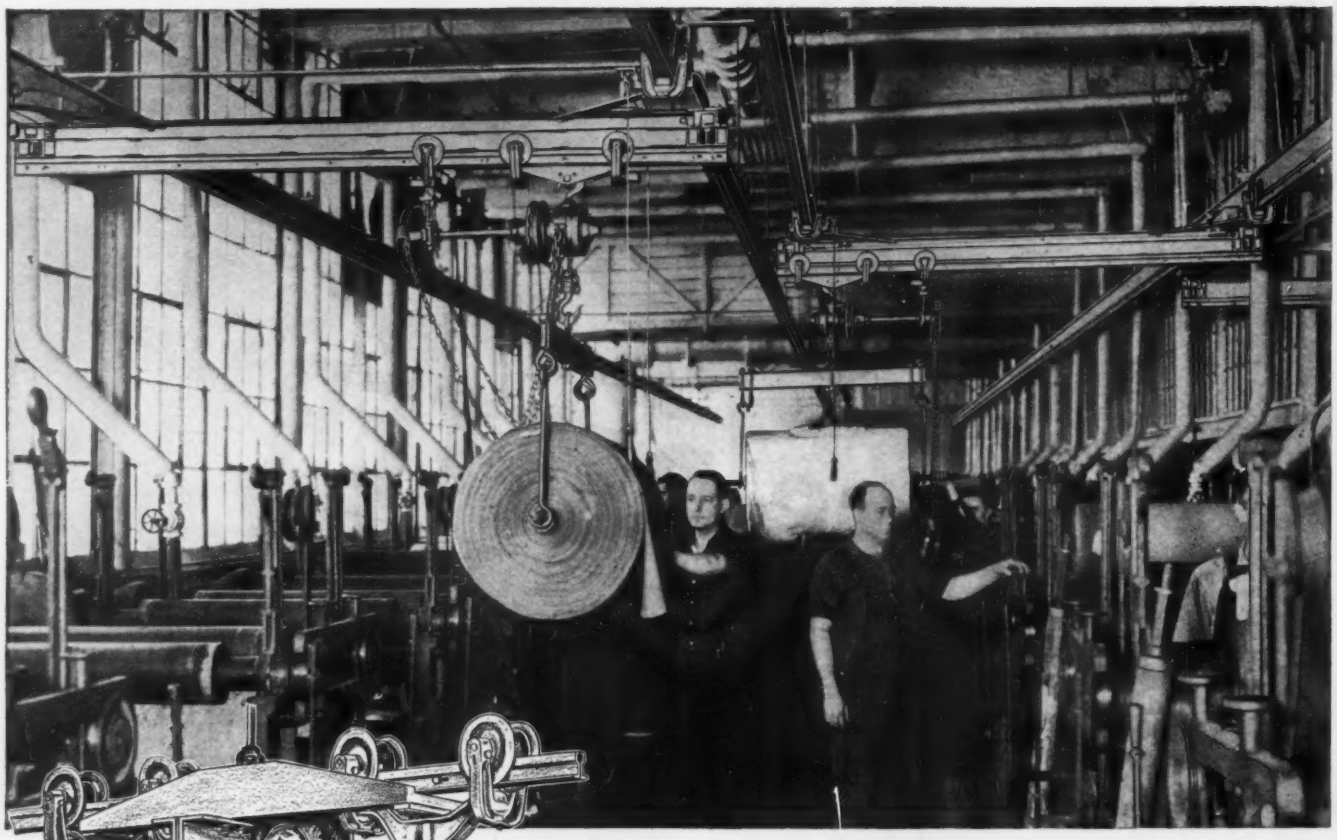
OFFERS THESE *EXTRA* ADVANTAGES

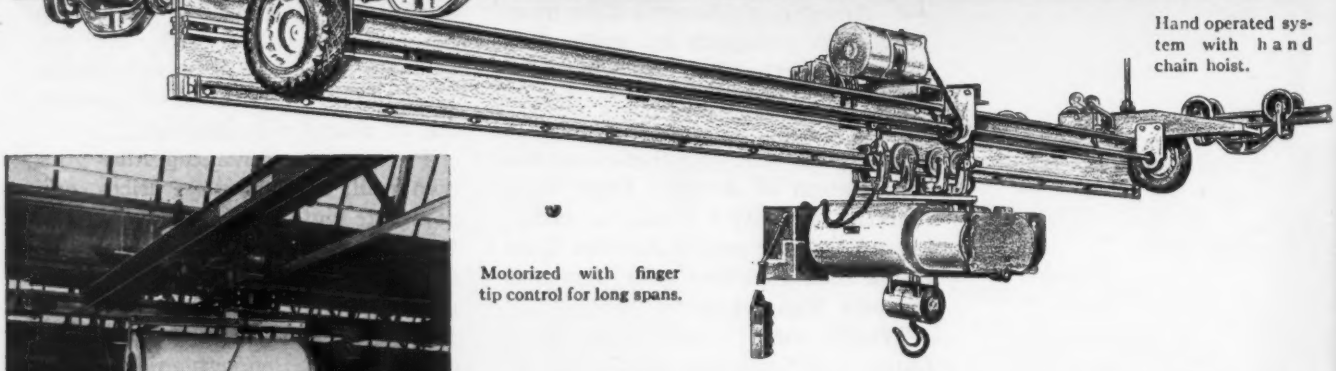
1. **LESS EYEBROWING**—Resistance to slicking minimizes eyebrowing.
2. **LONG SERVICE**—Accotex Cots are tough, can be rebuffed 3 or 4 times.
3. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers and are non-sweating.
4. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening during week-end shutdowns.
5. **SOLVENT RESISTANCE** — Accotex Cots are not affected by oil, water, dyes, or textile solvents.
6. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—can't break open in service.
7. **QUICK ASSEMBLY** — Accotex Cots are ready glued.

ARMSTRONG'S ACCOTEX COTS

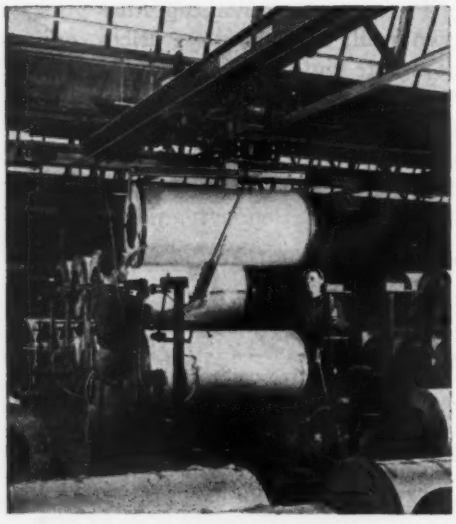
CORK COTS • ACCOTEX APRONS

American MonoRail CRANES Handle BEAMS with PRECISION





Hand operated system with hand chain hoist.



Motorized with finger tip control for long spans.

Beams and rolls move fast and safe when American MonoRail Cranes serve your warpers, slashers and looms. They reduce fatigue and accidents—eliminate congestion and spoilage—keep production on schedule without delay.

American MonoRail Cranes are built from standard parts to meet your requirements for either manual or power operation. Crane bridges can be interlocked with spur tracks for free passage between processes. Let an American MonoRail engineer show how beam and roll handling costs can be reduced in your plant.

Write for copy of Bulletin C-1 showing hundreds of illustrations.

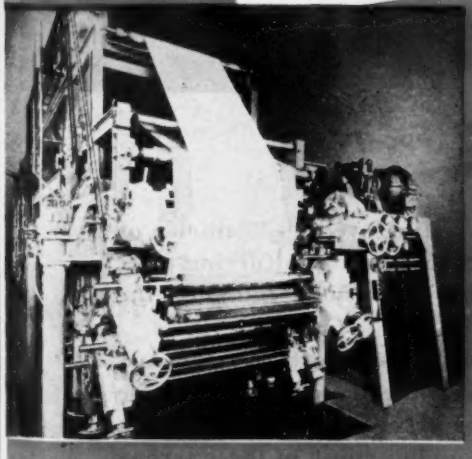
THE AMERICAN **MONORAIL** COMPANY

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

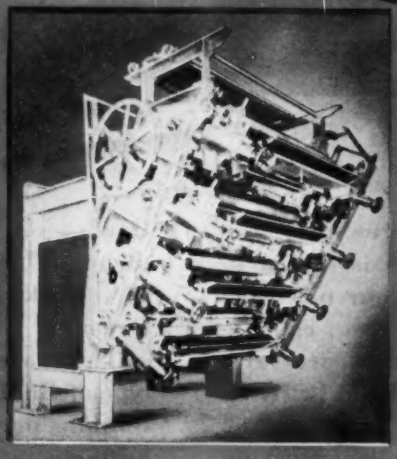
WALDRON *Textile* PRINTERS

Provide a choice of methods to best meet specific requirements

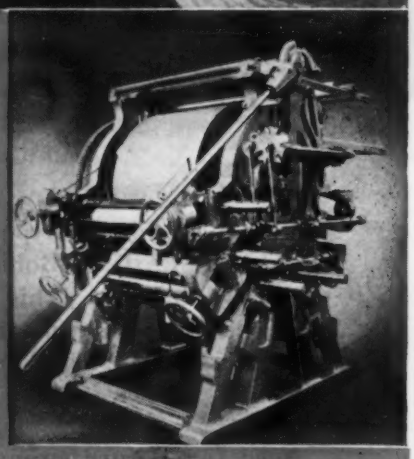
Intaglio or engraved roll; prints mounted vertically or around an arc; one color or eight—there's a modern WALDRON Printer for your job. Each WALDRON machine is engineered to meet the most exacting requirements in impression, register and speed as their performance records prove. Our Technical Advisory Service is available to you.



Waldron 8 color intaglio printer, individual impression roll type. Small diameter backing roll allows sharper impression on material being printed.



Waldron intaglio printer with prints mounted in vertical position instead of around portion of an arc.



Waldron 6 color engraved roll printed with colors grouped around a large master impression cylinder. Ideal where very close register is essential.

JOHN WALDRON CORP.

Main Office & Works – NEW BRUNSWICK, NEW JERSEY

CHICAGO - 6
201 N. WELLS ST.

NEW YORK - 17
350 MADISON AVE.

BOSTON - 9
79 MILK ST.

BUILDERS OF QUALITY MACHINES SINCE 1827

No Bobbin Weakness Here!

Design of the new type screw that goes into LESTERSHIRE Bobbins is shown in the above drawing. This is our newly-developed end grain Anchor Screw, capable of holding up to 7,500 pounds pressure. They are standard in all LESTERSHIRE Bobbins.

Need for greater strength and wearing qualities in Bobbins led LESTERSHIRE to research and develop this special Lascrew (LESTERSHIRE ANCHOR SCREW). A screw that will hold in end-grain of hard maple even stronger than a rivet—so strong the screw heads pull right through whatever material is used for Bobbin Heads—on Bakelite even ½" thick, or through ⅛" Steel Plate reinforcing over ⅜" thick Fibre — *without budging the screw!*

There are several sizes of Lascrews. Any type of Bobbin can be made. Yarn on these Bobbins may be processed by water, steam, heat, etc., with no loosening of these screws in the wood.

Bobbins which heretofore have given much trouble and but short life due to dimensional limitation (large spindle hole with relatively small diameter barrel) are, with Lascrew construction, made strong and durable.

PRECISION SPECIAL PURPOSE BOBBINS

LESTERSHIRE SPOOL & MFG. CO.

JOHNSON CITY, NEW YORK

WAX MAKES THE DIFFERENCE

JOHNSON'S WAX-FORTIFIED Interior Finish

gives your walls these 4 PLUS features:

Rich, lustrous beauty that only wax-fortification makes possible.

Lengthened decorating cycle because of remarkable durability. Stays clean longer, resists stains, mars and scratches.

Easier cleaning when finally necessary, because of the wax. Film retains its gloss—resists caustic cleaners.

High light reflection longer—better light diffusion. Satin-smooth finish—no harsh glare.

Coming your way! Though not available today, this wax-fortified finish will be supplied just as soon as war restrictions on certain materials are lifted. Now is the time to get all the facts!

in this patented maintenance finish!

Wax impregnation—that's the difference—and that's why Johnson's Wax-Fortified Interior Finish gives you these important advantages! Wax-Fortified has wax *all through* the film. Its rich wax lustre lasts as long as the finish remains—doesn't dull when washed or cleaned, and is easier to clean when necessary. Light reflection values—high at the start—remain high, yet don't cause glare, because light rays are diffused.

Higher maintenance efficiency—lower maintenance costs

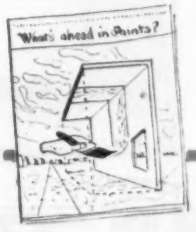
Wax-Fortified is a superior finish—a different finish that gives greater beauty and extra protection. It is made in white and a variety of colors that have broad coverage and great hiding power.

Refinishing is easy

When refinishing is finally necessary, the wax in Wax-Fortified does not retard adhesion, and no special cleaning is required. You can recoat with Johnson's Wax-Fortified, or with ordinary paint.

Bakeries, food plants, dairies, factories, office buildings, department stores, schools and hospitals will find Wax-Fortified a boon to solving their painting problems. It will give them a better finish and greatly simplify maintenance.

For full details, mail the coupon today!



★ *Now! Buy EXTRA War Bonds—and hold what you have!* ★

Made by the makers of

JOHNSON'S WAX

A name everyone knows

S. C. JOHNSON & SON, Inc., Racine, Wisconsin

S. C. Johnson & Son, Ltd., Brantford, Canada

S. C. Johnson & Son, Inc., Dept. T-85
Maintenance Products Department, Racine, Wis.

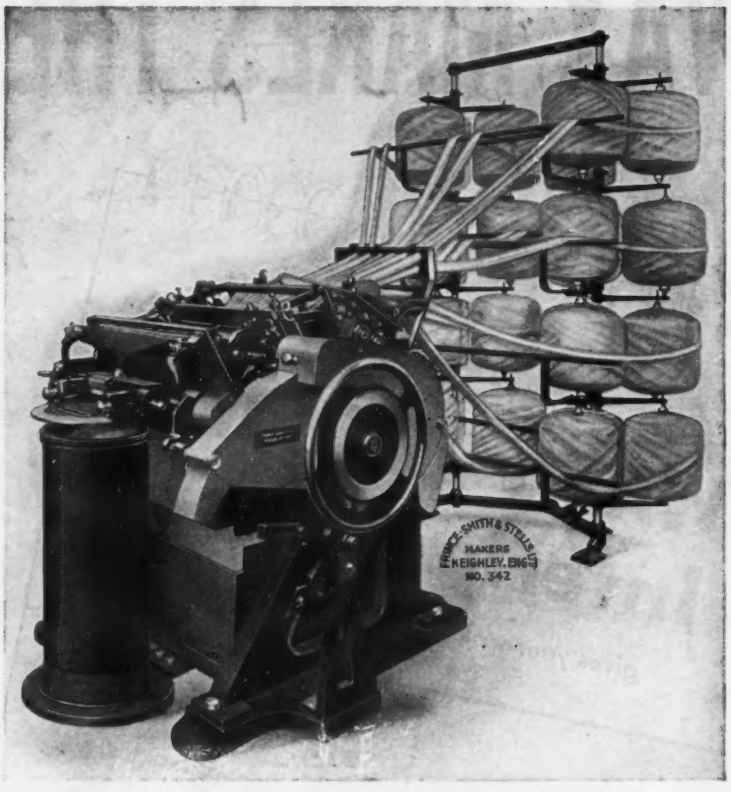
Gentlemen: Yes, I'm interested in what "Wax-Fortified" will do for my walls. Please send the "What's Ahead in Paints" brochure.

*Name*_____

*Address*_____

*Business or institution*_____

WE ARE MAKERS OF THE CONTINENTAL AND ENGLISH SYSTEMS OF COMBING, DRAWING, SPINNING & TWISTING



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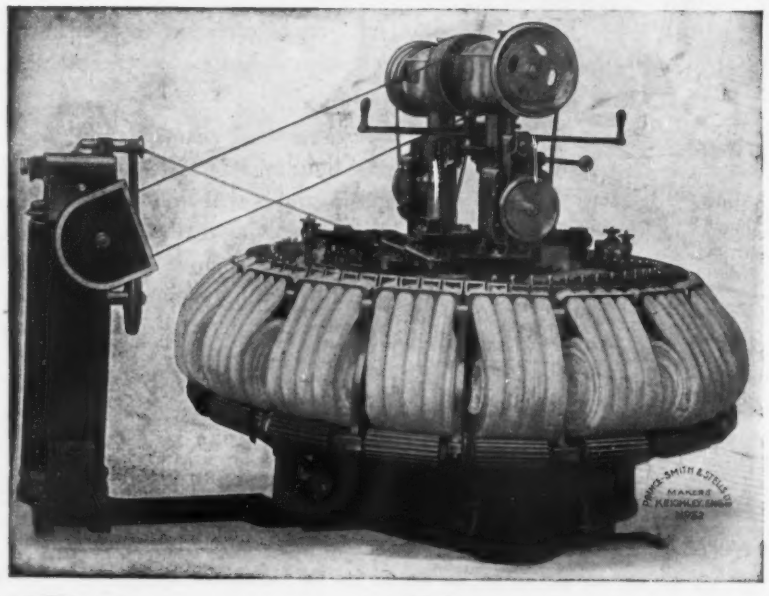
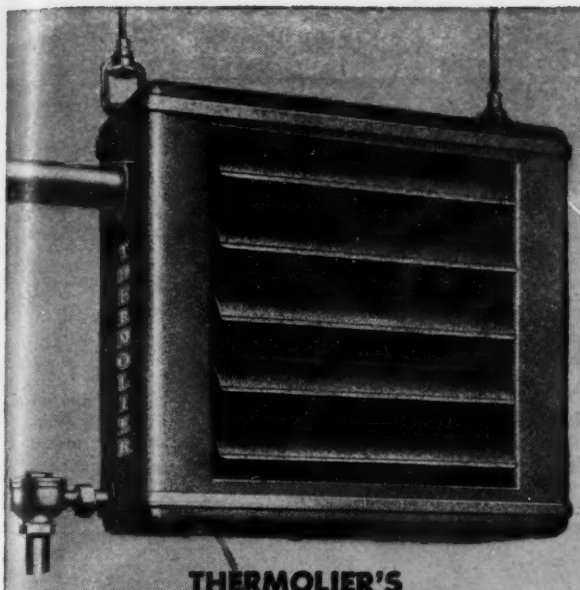


THIS UNIQUE POSITION MEANS WE CAN OFFER YOU OUR SERVICES NO MATTER WHICH SYSTEM YOU ARE INTERESTED IN.

Sole Agents U. S. A. & Canada
ATKINSON, HASERICK & CO.
211 Congress St. - Boston 6, Mass.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS
• **KEIGHLEY** (Yorkshire) **ENGLAND** •



THERMOLIERS
are back again!

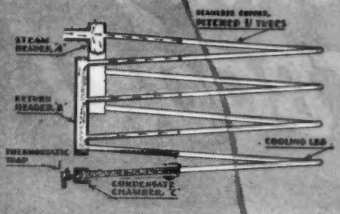
Now is the time to do something about your unsatisfactory heating equipment, before last winter's headaches are repeated.

Here's good news for you. GRINNELL is making THERMOLIERS again. They are the same efficient, engineered unit heaters that have been delivering more heat at less cost for thousands of satisfied customers for years.

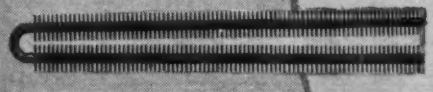
Talk over your heating problems with a Grinnell Engineer. He'll show you how Thermoliers distribute heat uniformly to every square foot of your buildings, improve employee morale and output and save up to 27% of still-scarce fuel.

Thermoliers' 12 points of superiority make them the logical choice in unit heaters. Ask for the new Grinnell Thermolier catalog 6-E. It gives all the details of construction, application, capacities and installation. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

THERMOLIER'S SUPERIOR FEATURES

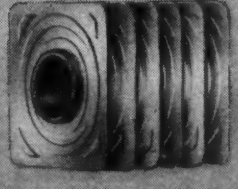


INTERNAL COOLING LEG assures continuous drainage of condensate and makes a simple thermostatic trap practical. It is equal to a run of more than 100 feet of ordinary exterior cooling leg piping.



BUILT-IN EXPANSION PROVISIONS. The "U" type tubes allow expansion and contraction, ease damaging strains.

LEAKPROOF TUBE-TO-HEADER CONSTRUCTION. Joints made by the expanding method assure safety and durability.



SUPERIOR HEATING ELEMENT. Square copper fins on strong seamless copper tubing provide 24% more radiating surface.

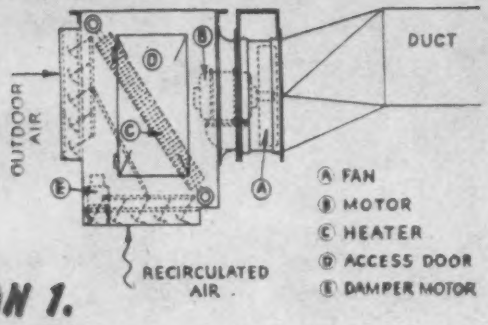
Other Points of Thermolier Superiority

Tube design minimizes dirt collection • built-in drainage • continuous rated capacity • heavy frame gives greater rigidity • motor and fan meet specific Thermolier requirements • simple piping connections • adjustable hangers facilitate erection • packed for easy installation.

GRINNELL

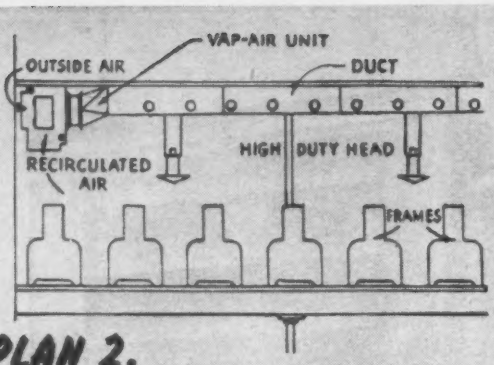
Thermolier Unit Heaters

FOR FULL VALUE FROM FUEL DOLLARS



PLAN 1.

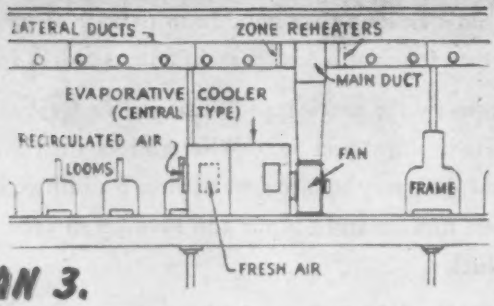
VAP-AIR BLENDER—Provides a definite reduction in summer room-temperatures at extremely low-cost. Used with existing humidification system. Evenly distributes blended indoor and outdoor air. Both humidity and temperature automatically controlled. Your maintenance man can install it.



PLAN 2.

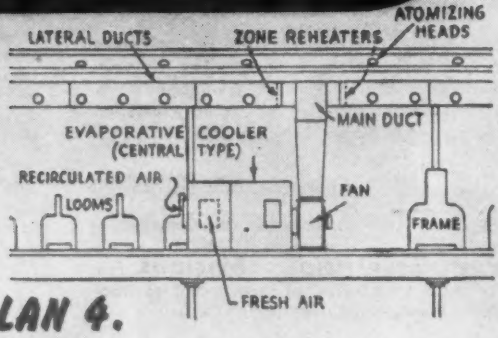
VAP-AIR BLENDER PLUS HEAD SYSTEM—Provides guaranteed reduction of room temperature at lowest possible cost. Maintains different temperatures and humidities in different rooms. Present humidifiers may be adopted. Controls automatic throughout. Sturtevant supervises installation.

Pick Your Air Conditioning TO FIT YOUR POCKETBOOK!



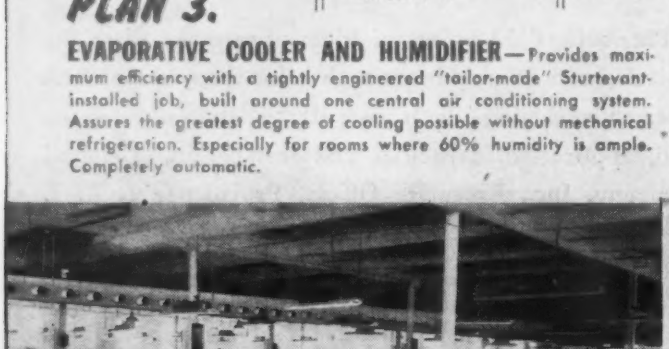
PLAN 3.

EVAPORATIVE COOLER AND HUMIDIFIER—Provides maximum efficiency with a tightly engineered "tailor-made" Sturtevant-installed job, built around one central air conditioning system. Assures the greatest degree of cooling possible without mechanical refrigeration. Especially for rooms where 60% humidity is ample. Completely automatic.

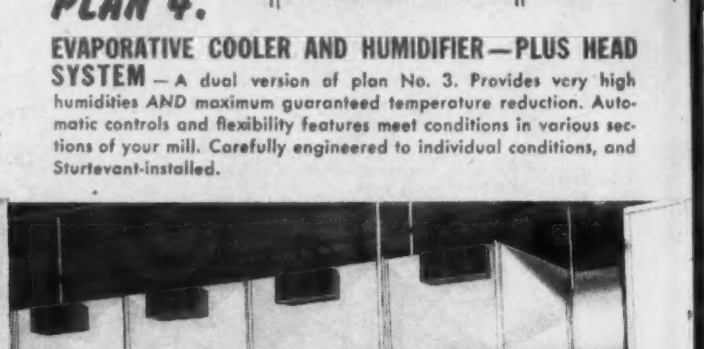


PLAN 4.

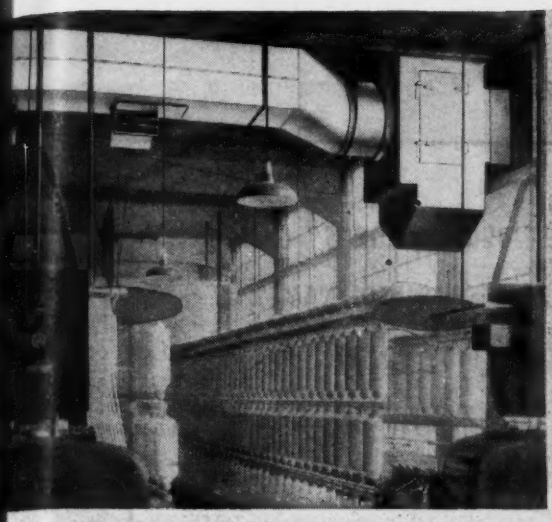
EVAPORATIVE COOLER AND HUMIDIFIER—PLUS HEAD SYSTEM—A dual version of plan No. 3. Provides very high humidities *AND* maximum guaranteed temperature reduction. Automatic controls and flexibility features meet conditions in various sections of your mill. Carefully engineered to individual conditions, and Sturtevant-installed.



KNITTING ROOM... Ramseur Hosiery Mills, Ramseur, N.C. Sturtevant *Plan No. 3* on the job. Ideal, automatically-controlled climate boosts efficiency of plant personnel, resulting in fewer "seconds" and "rejects".

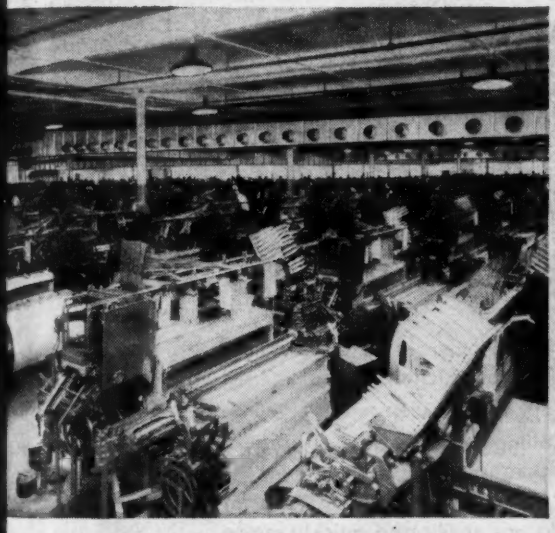


SPINNING ROOM . . . Columbia Mills, Columbia, S.C. *Sturtevant Plan No. 2.* Evaporative Cooling System at work. Provides uniform, draftless air distribution. Controls temperature and humidity, producing better working conditions.



TWISTER ROOM . . . Maverick Mills, East Boston, Mass. *Plan No. 1.* Sturtevant Air Conditioning System removes hot spots; gives uniform air distribution with uniform humidity and regain. All plant operations bettered.

BROCADE WEAVE SHED . . . Verney Taunton Mills Inc., East Taunton, Mass. *Plan No. 3.* Sturtevant Air Conditioning Installation, giving closer control of humidity and temperature; higher operator morale, fewer loom adjustments.



RAYON WEAVING ROOM . . . Carter Fabrics Corp., Greensboro, N. C. Sturtevant installation of *Plan No. 3.* Uniform, draftless air distribution—with dust, dirt, and soot *out*. Employee efficiency *up*.

TWISTER ROOM . . . Rocky Mount Mills, Rocky Mount, N.C. *Plan No. 1.* Sturtevant Evaporative Cooling installation. Temperatures reduced 8 to 10°F—with improved working conditions resulting in decreased end breakage.

DRYING

HEATING

MECHANICAL DRAFT

VENTILATION

AIR CONDITIONING

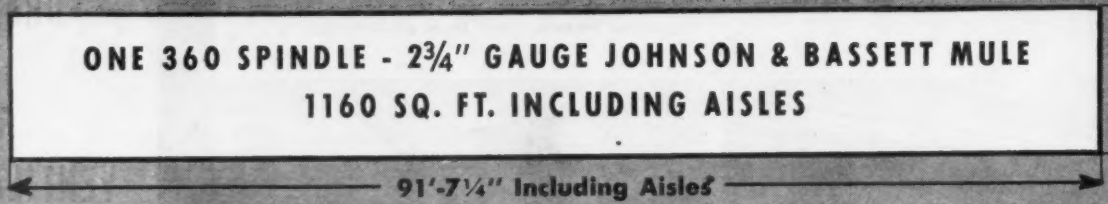
DUST AND FUME CONTROL

Year-round air conditioning at a price you can afford to pay—that's what Sturtevant's 4-Plan Program offers you. Here's why: — No mechanical refrigeration is involved. EVAPORATIVE COOLING does the job—often by utilizing existing humidifying equipment. And that cuts a big slice off installation costs! Sturtevant's sharp-pencilled answers to textile air conditioning problems utilize the relatively cooler outdoor Wet Bulb Temperatures. And then bring these other advantages: — *Positive control* of desired temperatures and humidities — automatically. *Flexibility* to meet a variety of conditions. Remember — *a better place to work*, is going to be a mighty important factor in the days ahead — in addition to improved quality, better machine efficiency. Sturtevant can bring you such benefits — as it has to hur dreds of mills. We will be glad to work out the Plan best suited to your requirements, including mechanical refrigeration if necessary.

B. F. STURTEVANT COMPANY
Hyde Park — Boston 36, Mass.

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

J & B Modernized MULES



SPINDLE FOR SPINDLE THEY REQUIRE ABOUT 20% LESS FLOOR SPACE THAN SPINNING FRAMES

And yet they produce as much or MORE yarn in a given time than the latter. For instance, on 2¼ run all wool mix with 450 turns of twist to 74", a 360 spindle 2¾" gauge J & B Mule produces 375 lbs. in an eight hour day, whereas three 120-spindle, 5" gauge frames produce only 300 lbs. in the same time.

Furthermore, the spinners on the mule get $8.00 per day, whereas the spinners on the frame get $15.00 per day.

OTHER ADVANTAGES

1. The J & B Mule produces a true woolen yarn — superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning.

2. It permits inspection of the thread.

3. It will handle a much coarser roving than a frame, thereby increasing production at the card by 15% to 20%.

4. It will successfully spin short staple roving which will not hold together on a frame.

5. It requires less horse power than a frame.

6. The cost of the yarn produced is at least ½ that of yarn produced on a frame.

7. Its initial cost is several times less than that of frames with equal production.

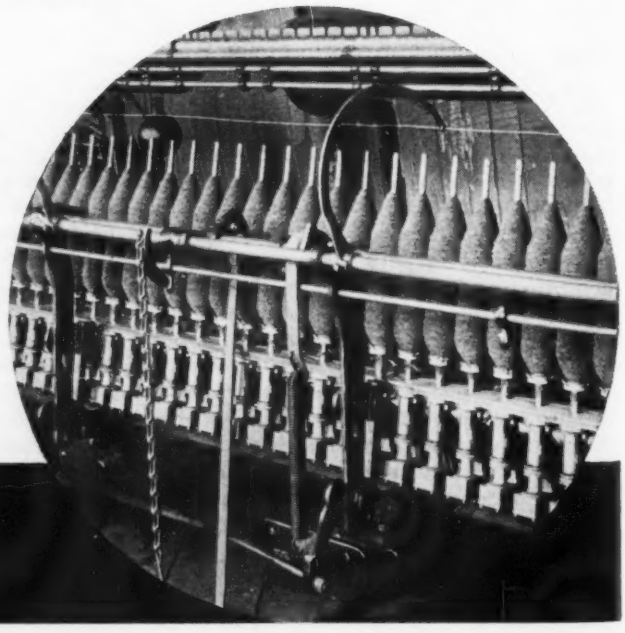
8. Its cost of upkeep is exceptionally low.

9. The J & B filling package does not require rewinding for an automatic loom.

10. Changes for spinning different types of yarn on the J & B Mule are easily and quickly made.

11. Mule bobbins cost less than frame bobbins.

Let us recommend an installation for your wool spinning requirements.



JOHNSON & BASSETT, INC.

WORCESTER, MASSACHUSETTS, U. S. A.

SMOOTH TOUGH LONG WEARING AND STAINLESS

in textile mill applications

Micarta is in use today in leading textile mills in many forms.

FOR SPINNING BUCKETS—Micarta is formed to precise dimensions—vibration free at 8000 rpm—and stainless.

FOR PIRNS—Micarta can be machined to 0.001 inch—for high-speed rotation without vibration, for lasting smoothness.

FOR GEARS—Micarta cuts down friction, is quiet in operation, is easy to lubricate, will not spark.

Compare Micarta with any other material —not one has a more valuable combination of properties for textile mill applications!

Micarta is smooth, tough and long wearing. It resists water, oil and dilute acids. It absorbs vibration and deadens noise. It will not stain delicate fabrics.

For textile mill uses, Micarta can be molded to close tolerances as in the Micarta spinning buckets shown above. It can be fabricated easily from laminated stock shapes with ordinary tools, as with the Micarta gear and pirn illustrated. In a new form—Micarta "444" preformed sheets—it can be post-formed with inexpensive dies into intricate, permanent shapes.

Full details on Micarta characteristics are contained in Micarta Data Book B-3184-A. Write for your copy. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-06376

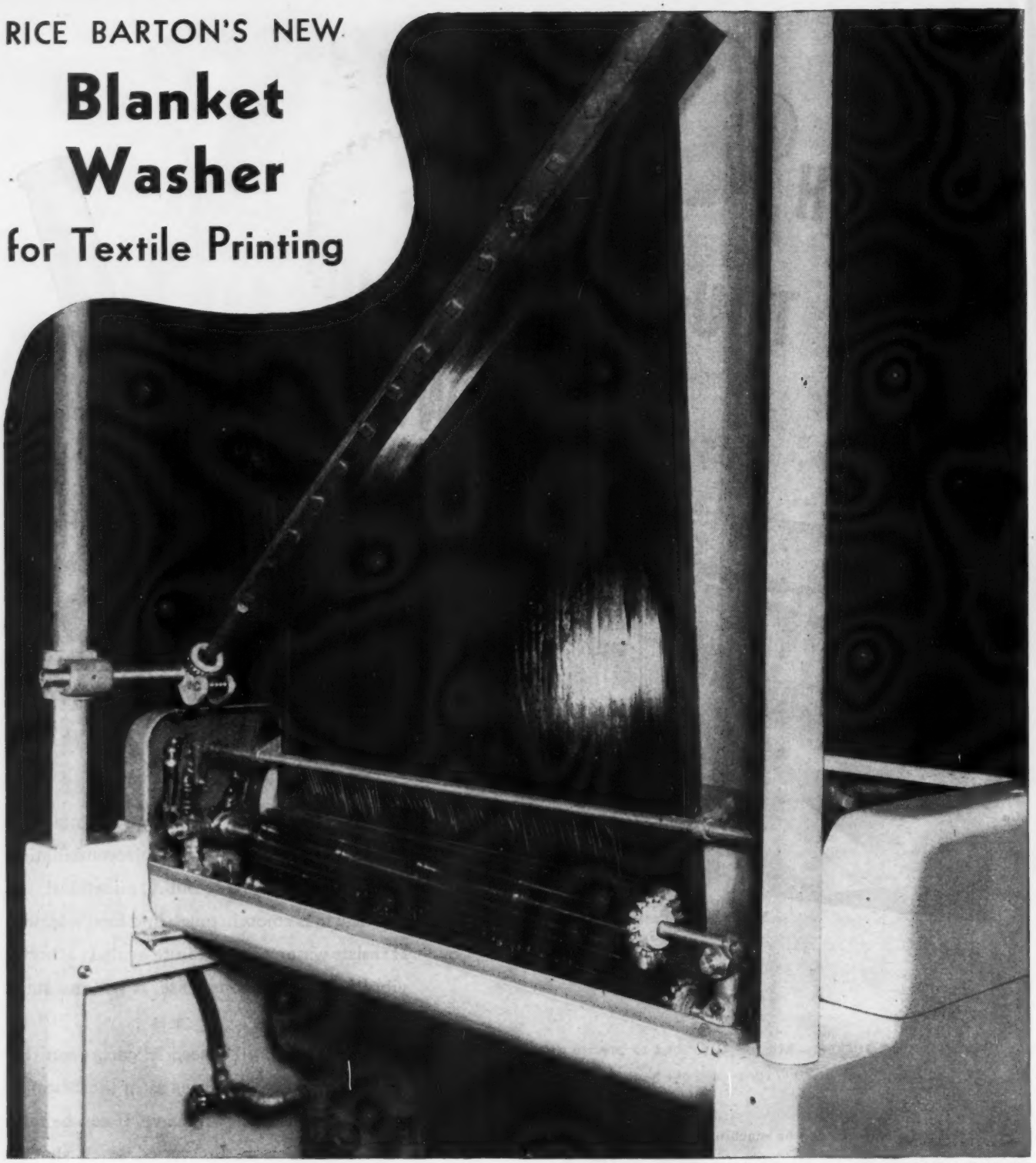
WESTINGHOUSE

Micarta

RICE BARTON'S NEW

Blanket Washer

for Textile Printing



PATENT APPLIED FOR

WITH the new Blanket Washer many types of fabrics may be printed without the need of a backgrey cloth. This, of course, eliminates the backgrey dryers and handling equipment.

The washer design is simplicity itself. No steam or steam coils required—no expensive washing medium required—no motor or motive power required except that supplied by the blanket itself.

Self-cleaning brushes scrub the blanket in lukewarm water. With the aid of a gentle-acting doctor blade it is delivered to the printing area dry and absolutely clean.

Because of its simple design, the installed cost is relatively low and the washer should pay for itself out of operating savings in a very short time.

Please write for further information.

Rice Barton Corporation
WORCESTER • MASSACHUSETTS

Mill executives voted this Dayco roll covering
"THE GREATEST IMPROVEMENT TOWARD MORE EFFICIENT COTTON SPINNING"... here's why..
1 It has a constant coefficient of friction
2 It has properly engineered resiliency Holds yarn against fluted roll—more uniform drafting
3 It gives years of production of more uniform yarn —at much lower cost

No wonder mill executives everywhere acclaim the Dayco Roll Covering "The greatest improvement toward more efficient cotton spinning". It completely obsoletes older type drafting-roll coverings, replaces them with *engineered precision!*

For instance, when other types of roll coverings are affected by humidity changes, Daycos remain *unaffected* because the coefficient of friction is engineered to remain constant.

Or when other roll coverings become glazed or grooved by long usage—Daycos retain perfect roundness *years longer!* And this same remarkable surface retains its engineered resilience to hold the yarn in contact with fluted roll to produce perfectly uniform drafting—for extra years of more economical production.

Determine *now* to go after reduced costs—and more uniform production! Standardize on Dayco Roll Coverings and *you'll* agree with cotton men everywhere that they're the "Greatest Improvement toward More Efficient Cotton Spinning".

THE DAYTON RUBBER MANUFACTURING COMPANY
Famous Dayco Synthetic Rubber Products Since 1934
DAYTON 1, OHIO **WAYNESVILLE, N. C.**
Main Sales Office: Woodside Bldg., Greenville, S. C.

Read these other great features:

- Improved drafting
- Not affected by temperature changes
- Proper cushioning
- No grooving—less ends down
- Not affected by hard ends
- Long service life
- Easy to apply
- Static free
- Oil resisting
- One-piece tubular construction
- Lower net roll costs
- Produces more uniform yarn

Roll Coverings by

Dayton Rubber

REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

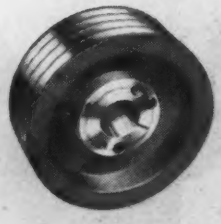
THE MARK OF TECHNICAL EXCELLENCE IN SYNTHETIC RUBBER

New

TAPER-LOCK

Sheave

PATENT APPLIED FOR



An entirely new type of taper bore sheave! No flanges . . no collars . . no excess weight. Breaks all speed records in mounting and demounting . . Saves time and temper . . And it's available in *ALL* stock sizes!

DODGE MANUFACTURING CORPORATION
MISHAWAKA INDIANA

DODGE
MISHAWAKA

TRANSMISSIONEERED MEANS

Here is the simplest, surest mechanism ever devised for holding wheels to shafts! No flange. No collar. No protruding parts.

The Taperlock Sheave mounts as a complete unit. Slip it on, line it up and tighten *while sighting.* It's in place on the first try!

The bushing is wedged into the sheave by means of set screws—with a firmness equivalent to a shrunk-on fit—whether the shaft is standard or normally undersize.

The Taperlock runs *true.* The bushing extends the entire length of the hub; it provides a *full* bearing surface.

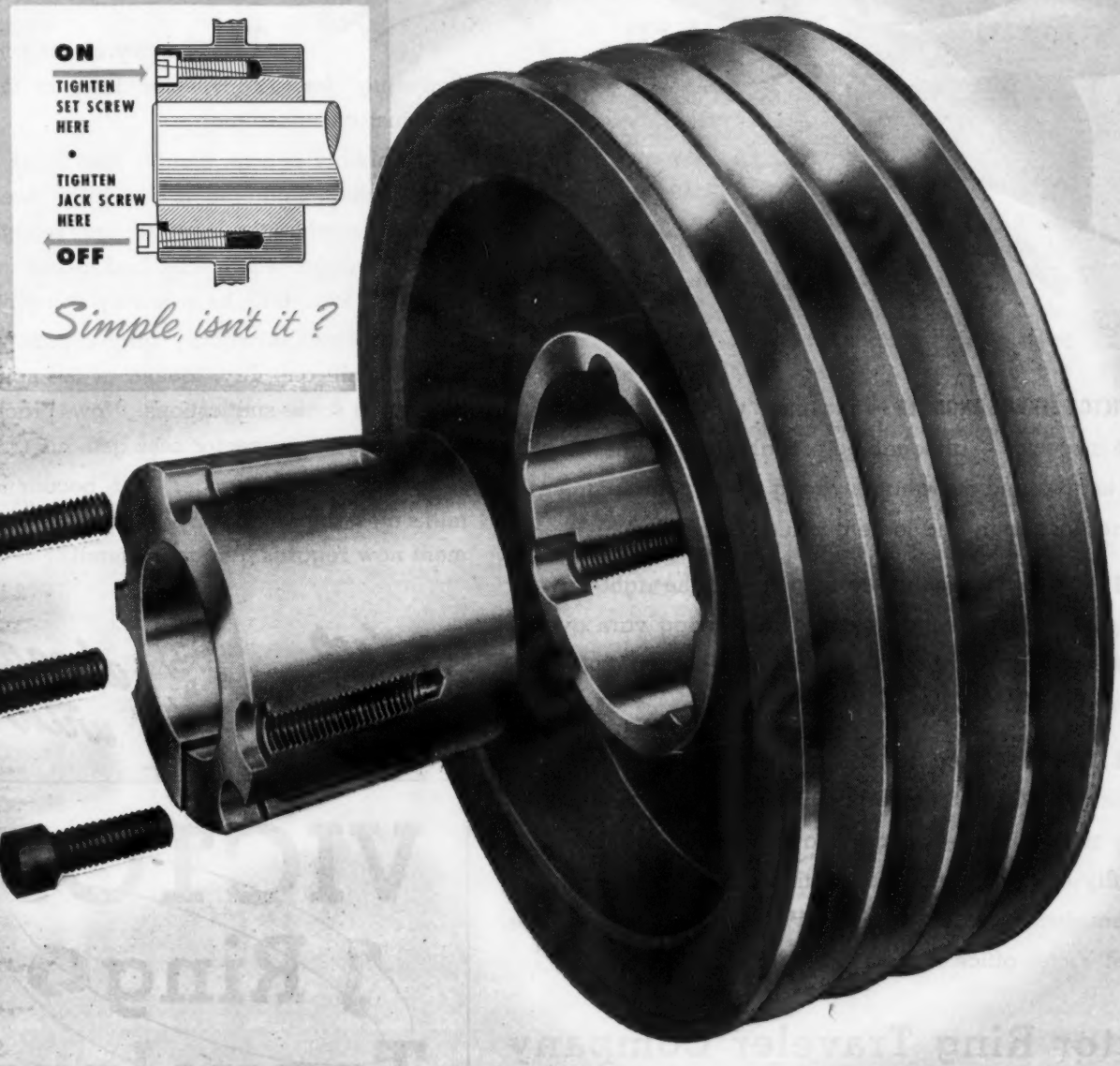
Close mountings are made possible. No flange nor collar nor other device is required at either end of the sheave hub.

The Taperlock "unlocks" with less effort than any other sheave—due to its special taper.

Taperlock Sheaves will be available in all stock sizes. For details call your local Dodge Transmissioneer. You'll find his name listed under "Power Transmission Equipment" in your classified phone book . . Or write Dodge, Mishawaka.

SIGN OF THE DODGE TRANSMISSIONEER

There are 257 Dodge factory graduate Transmissioneers, located in principal cities, to show you NEW and BETTER ways of transmitting power.



ADVANCED DESIGN IN POWER DRIVES

Copyright 1945 Dodge Mfg. Corporation

The Inspector is out of danger . . .

That story about someone "gunning" for the inspector down at the mill was just an idle rumor.

It probably is true, though, that some of the management muttered a few mild threats to themselves when the inspector was rejecting so much yardage, which they had to sell for seconds at a loss. Still, he was only doing his job.

Things changed shortly after a man* came into the mill one day, looked at the spinning, and made some suggestions. Now, practically everything the inspector sees gets his O. K.

So he's out of danger — of becoming the mill's most unpopular guy. In fact, the management now regards him as a friend!

*THE VICTOR SERVICE ENGINEER is the man who took the "heat" off the inspector — although he probably never knew it. His job is to help find out what is wrong when your spinning or twisting goes sour, and to help you sweeten it up.

RESULTS SHOW that his ability to recommend the right traveler for the job, and his suggestions for improving yarn quality have saved many thousands of yards of finished cloth from the inspector's "N. G.".

IF YOUR PROBLEM is traceable to bad spinning or twisting, why not talk to a Victor Service Engineer? You'll find him thoroughly mill-trained — a man who "talks your language" — and fully equipped with information on handling all types of fibers, including the newest. Write, wire, or phone the nearest Victor office . . . for prompt service.

Victor Ring Traveler Company

PROVIDENCE, R. I. — 20 Mathewson St. — Tel. Dexter 0737

GASTONIA, N. C. — 173 W. Franklin Ave. — Tel. 247

VICTOR Ring Travelers

Color...
IT'S STILL THE MASTER SALESMAN
Nearly 20 years ago, we advertised color as the "Master Salesman." It STILL holds that distinction!
Colored yarns, properly used, lift textile fabrics above price competition. Mills, as well as converters, benefit accordingly.
Yarn dyeing specialists for 35 years, we can help designers to select the best colors for a given fabric and can help mills to obtain the necessary yarns and to run them with maximum profit.
Any one of four Franklin Process plants can serve you. No matter which you select, the quality of your dyeings will be the same.
The time is not far off when you will NEED Color—the Master Salesman. Why not put him on your payroll NOW?
Franklin Process
LARGEST PACKAGE DYERS IN THE WORLD
New York Representative, 40 Worth Street
Chicago Representative, 100 West Monroe Street
PROVIDENCE
PHILADELPHIA
GREENVILLE
CHATTANOOGA

DESIGNED TO WORK ALL TYPES AND STAPLES OF FIBRES THAT MAY BE HANDLED ON THE COTTON SYSTEM

Maintenance and lubrication have been given every consideration.

Special permanent seal bearings throughout.

May be relubricated by means of newly developed injection system.

Lubrication required every three years.

V belt and spiral gear drive throughout guarantee smooth, quiet operation.

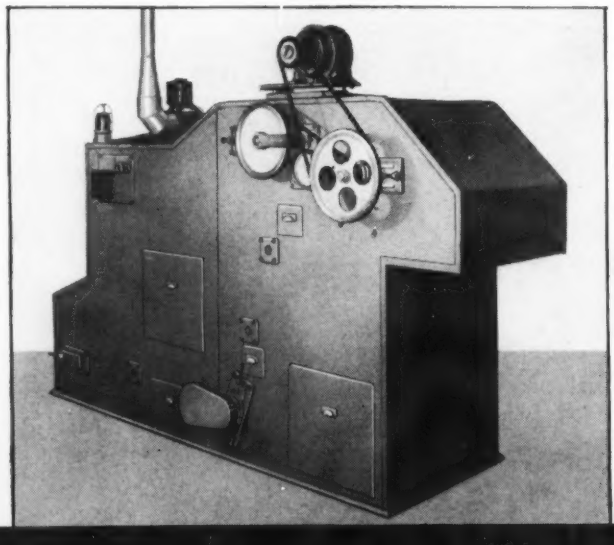
System of lights and sealing door indicate feeding demand.

Machine entirely self contained having integral dust exhaust.

Fabricated steel construction and color conditioned.

☆ ☆ ☆

H & B AMERICAN MACHINE COMPANY. Plant at Pawtucket, Rhode Island. Boston Office, 161 Devonshire Street; Atlanta Office, 815 Citizens & Southern National Bank Building; Charlotte Office, 1201-3 Johnston Building.

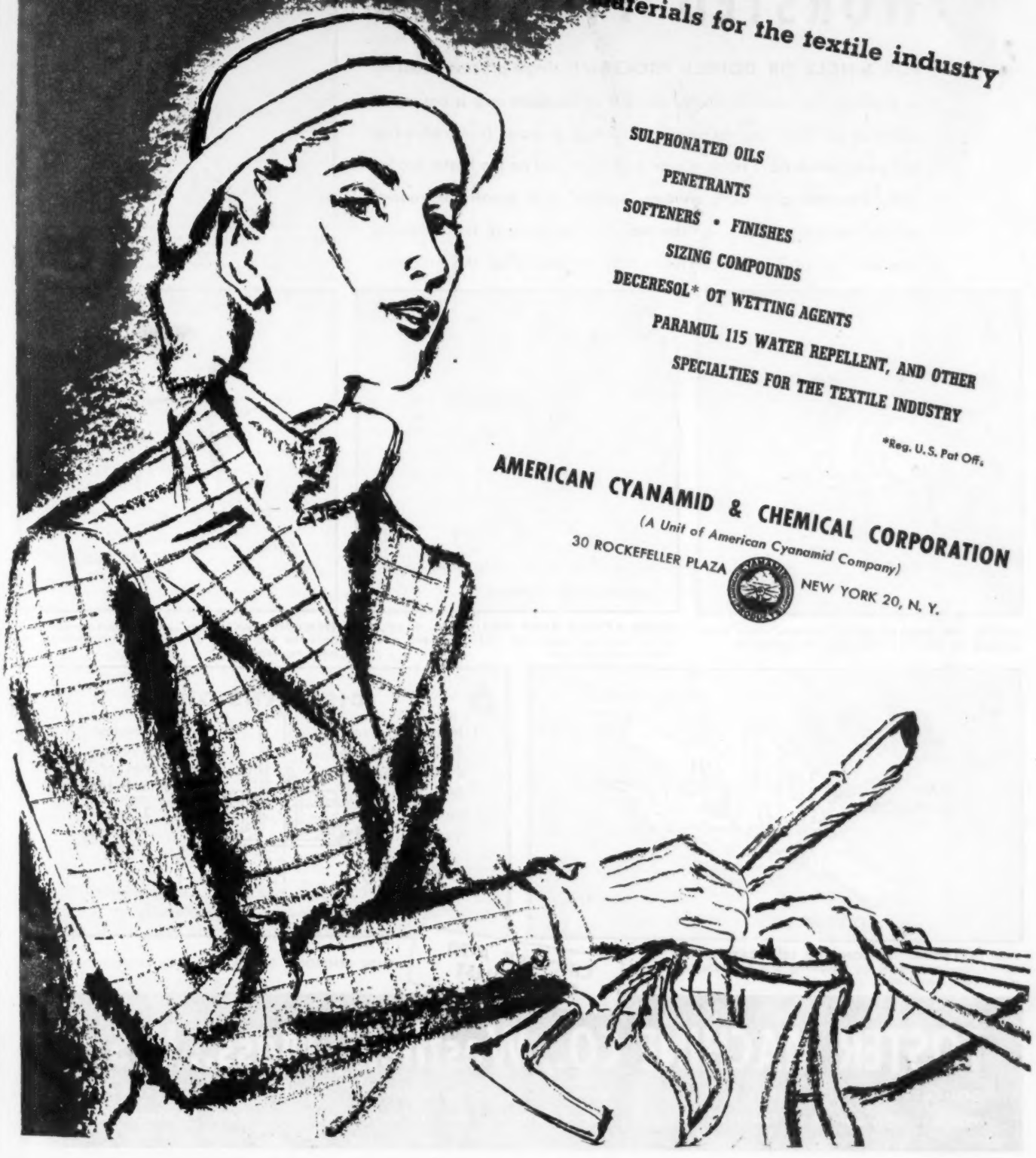


THIS NEW BLENDING FEEDER NOW IN PRODUCTION

H&B BLENDING FEEDER

Unsurpassed Distinction

...Cyanamid's controlled quality materials for the textile industry



SULPHONATED OILS

PENETRANTS

SOFTENERS • FINISHES

SIZING COMPOUNDS

DECERESOL* OT WETTING AGENTS

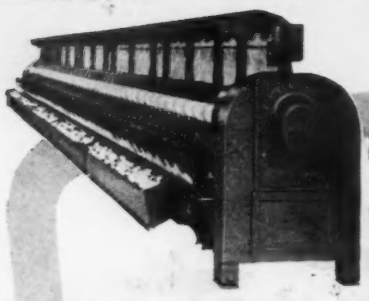
PARAMUL 115 WATER REPELLENT, AND OTHER SPECIALTIES FOR THE TEXTILE INDUSTRY

*Reg. U. S. Pat Off.

AMERICAN CYANAMID & CHEMICAL CORPORATION

(A Unit of American Cyanamid Company)

30 ROCKEFELLER PLAZA NEW YORK 20, N. Y.



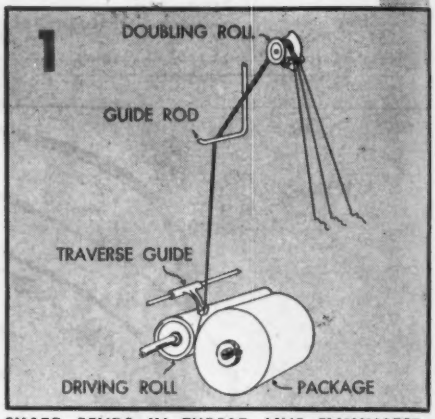
the FOSTER MODEL 57 DOUBLER

6 REASONS WHY IT IS BEST FOR

WORSTED TWISTING

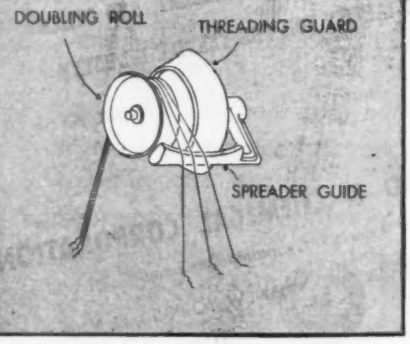
FOR SINGLE OR DOUBLE PROCESS: In single process doubling or folding, the machine draws direct from bobbins and is equipped with slub catchers. In two process doubling, it draws from cones (up to 5 ends) which have been wound and inspected on the Foster Model 102. Exceptionally high winding speeds and greatly increased production are possible with the Model 57 because of the following features. 6" or 7" traverse tubes may be wound on this machine.

1



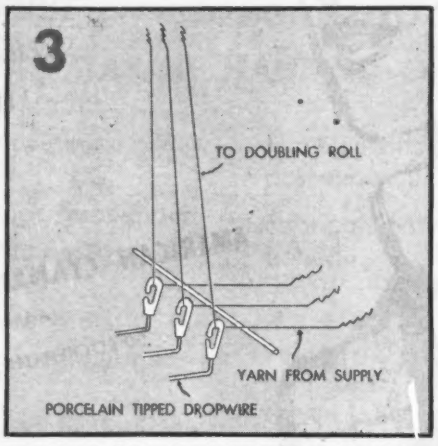
SHARP BENDS IN THREAD LINE ELIMINATED. Ends go from doubling roll to the Traverse Guide in back of package without any sharp bends. Minimum strain on yarn.

2



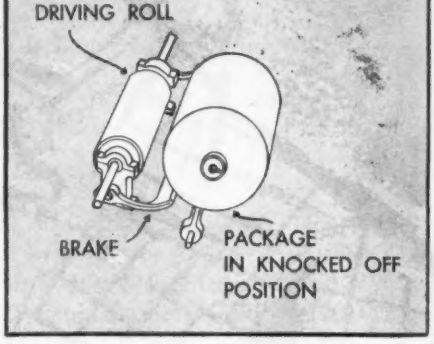
GUARD ON THREAD ROLL prevents yarn from jumping off Doubling Roll when threading up.

3



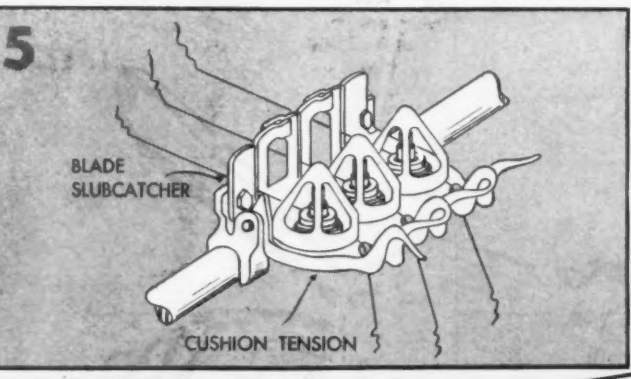
QUICK-ACTING STOP MOTION, with efficient brake, leaves sufficient yarn for single end piecing when supply runs out.

4



EFFICIENT BRAKE comes up under package and contacts the full length of tube. No adjustments; no parts to wear.

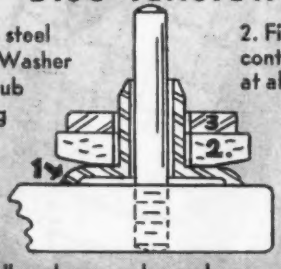
5



SELF THREADING TENSION AND SLUB CATCHER (when required) for quick threading and for automatic yarn inspection.

6 **DISC TENSION**

1. Hardened steel Hub Disc Washer Prevents hub from being cut by yarn
2. Fibre washer contacts yarn at all times for smooth tension
3. Tension weight



All washers revolve and wear evenly

DISC TENSION. Tension varied by changing weights.

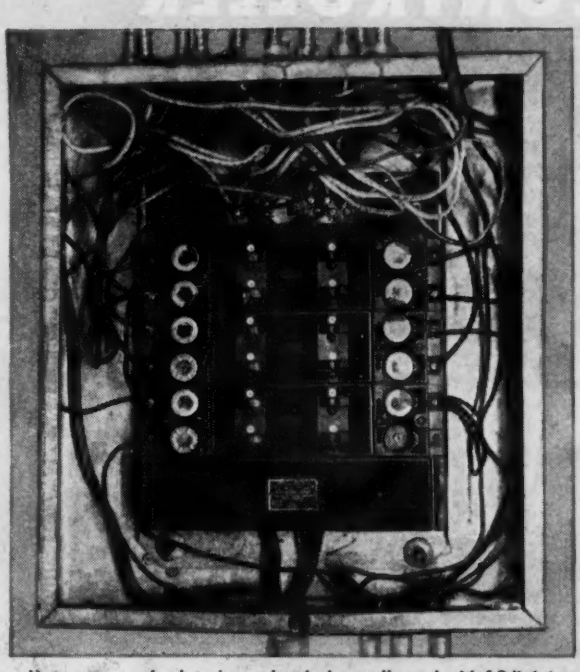
CIRCULAR A-90 ON REQUEST

FOSTER MACHINE CO., Westfield, Mass., U.S.A.

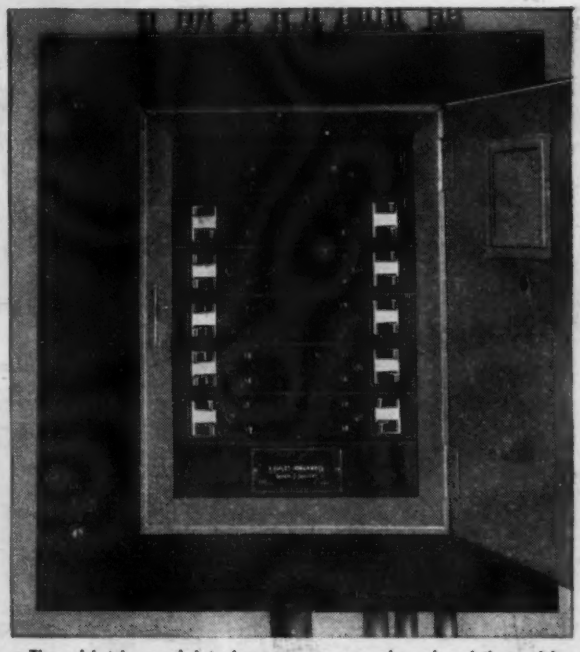
SOUTHERN OFFICE: Johnston Building Charlotte, North Carolina • Canadian Representative: Ross Whitehead & Company, Limited, University Tower Building, 660 Ste. Catherine Street West, Montreal, Quebec

66⅔% More Capacity

THROUGH THIS SPEEDY SQUARE D CONVERSION PLAN



• Here was an obsoleted, overloaded panelboard with 12 lighting and power circuits. Could the number of circuits be increased without removing the existing box or adding conduit? Yes, and at the right is the result!



• The old trim and interior were removed and existing wiring pulled out. By rewiring with thin-wall wire, existing conduit could be used. The new Multi-breaker interior provides 20 circuits. The changeover required less than 24 hours.

SQUARE D's Conversion Plan modernizes obsolete panelboards—provides extra circuits, requires no extra space. Here are definite results Square D Panelboard Conversion has produced in scores of plants and can produce in yours:

- **Increases panelboard capacities; adds modern circuit breaker convenience and protection.**
- **Utilizes existing conduits and boxes.**
- **Conserves power previously lost through overloads.**
- **Eliminates the replacement of branch circuit switches, fuses and fuse clips, due to excessive heating.**

Get the complete Panelboard Conversion Plan story from your Square D Field Engineer . . . or mail the coupon for free illustrated booklet showing actual Conversion Plan results.

SEND FOR YOUR FREE COPY OF "more capacity"

Facts, figures, pictures of actual Square D Panelboard Conversions . . . showing you how Square D's Conversion Plan gives you up to 300% more capacity with a minimum of time and labor. Your copy is FREE—mail coupon today!

SQUARE D COMPANY
6060 Rivard Street, Detroit 11, Michigan

T-7

NAME .....

COMPANY ..... TITLE .....

ADDRESS .....

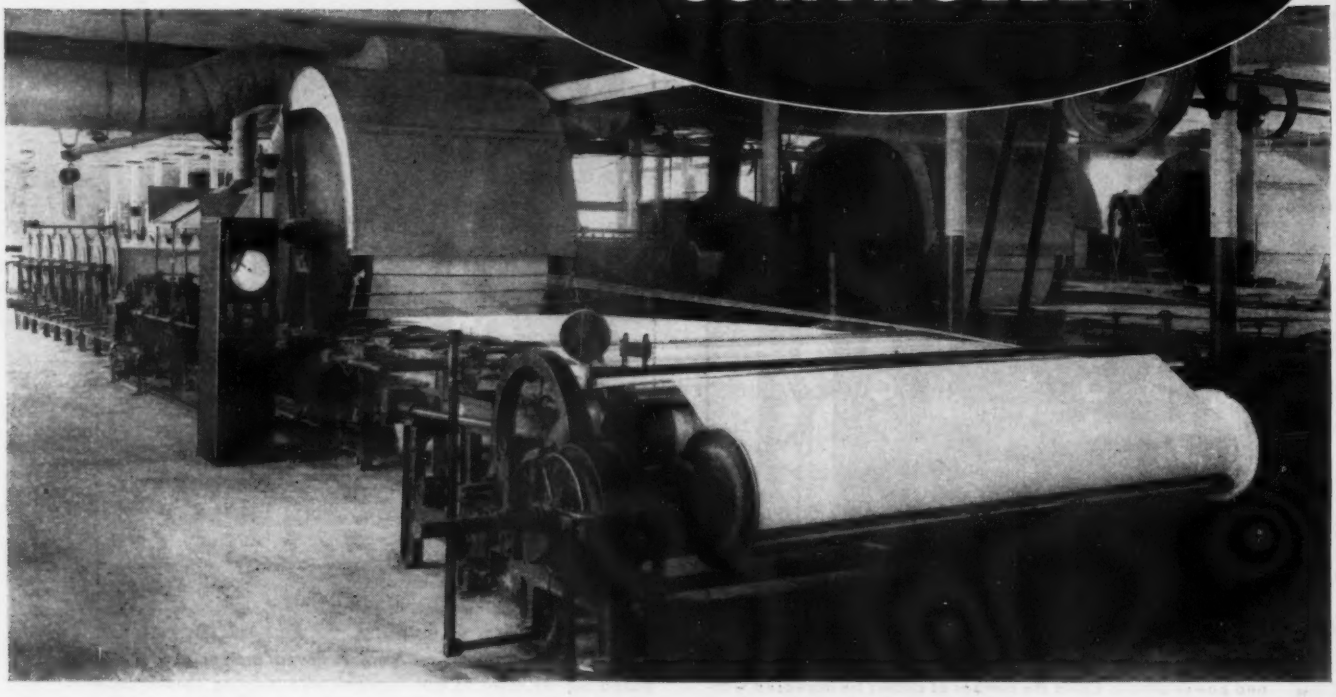
CITY ..... ZONE .... STATE .....

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

AUTOMATIC ELECTRONIC CONTROL OF REGAIN AT THE SLASHER GIVES MORE UNIFORM QUALITY PRODUCT AND INCREASED PRODUCTION

BARBER-COLMAN MOISTURE CONTENT CONTROLLER



FOR IMPROVED SLASHING

FROM YOUR PRESENT SLASHER ROOM EQUIPMENT

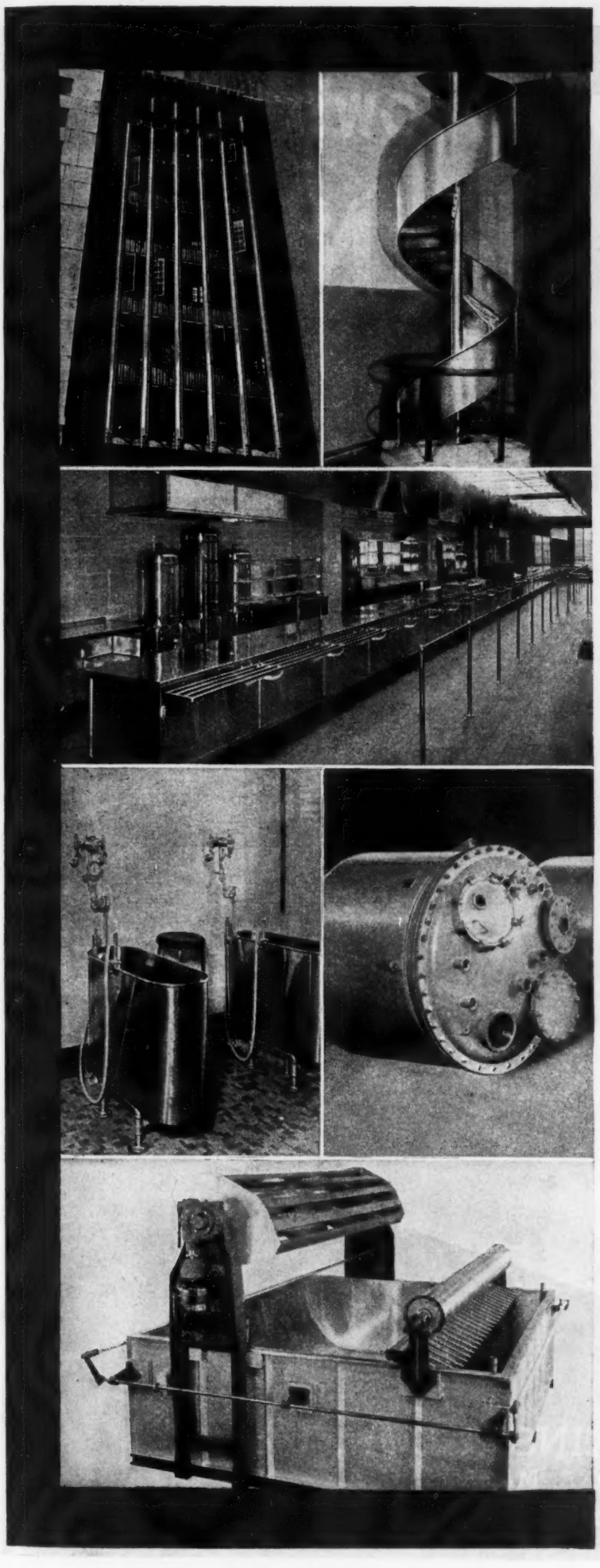
The dressing process is one of the most important steps in the manufacture of yarn. Regardless of the care taken prior to this operation, improper slashing will damage the strongest of fibres. The Barber - Colman Moisture Content Control system will permit your slashers to be operated at their maximum temperature, and at the corresponding maximum speed for a desired moisture content. As a result, you are able to get the greatest possible yardage, and consequently the greatest return on your investment from your present slashers and slasher room equipment. Why not take advantage of our many years of experience and the mature consideration which we can give the problem of controlling the moisture content of warps? The Barber - Colman field engineer in your territory will be glad to assist. Don't hestitate to call him.

For details on the principles, features, advantages, and the benefits to be gained from Barber-Colman Moisture Content Control equipment, send for this brochure. Ask for Bulletin F-1705-1.

Barber-Colman Company

45 YEARS EXPERIENCE SERVING TEXTILE MILLS

ROCKFORD ILLINOIS — BOSTON MASSACHUSETTS — GREENVILLE SOUTH CAROLINA — GREENSBORO NORTH CAROLINA — ATLANTA GEORGIA

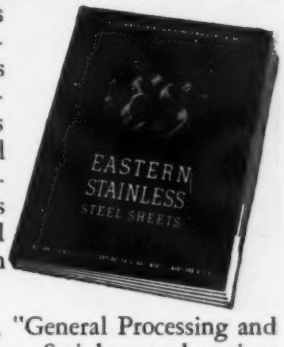


FACTS
you want to know about
STAINLESS STEELS

Reconversion, limited as it has been to date, points to expanding utilization of Stainless Steels in hundreds of industries for thousands of new applications.

In using to best advantage, the versatility, utility, economy and attractiveness of Eastern Stainless Steels in your business, it's important you know the characteristics and applications of each of the twelve Eastern Stainless standard grades.

Just Published — New 96 Page Catalog



To help you fabricate this superior metal in your industry, Eastern Stainless offers you free, a comprehensive new catalog. This handy manual describes and illustrates the major applications of Stainless Steels and gives much technical data compiled by Eastern Stainless specialists.

Under the classification, "General Processing and Fabrication," the new Eastern Stainless catalog gives valuable information on the following:

SHEARING • JOINING • FORMING
MACHINING • HEAT TREATMENT • FINISHING
DESCALING • CLEANING • PASSIVATING

Almost any question you have regarding Stainless Steels is answered in this up-to-the-minute Eastern Stainless catalog. Be sure and write for your free copy.

EASTERN STAINLESS TECHNICAL SERVICE is of special value to producer and consumer alike, for it relates to all phases of production, processing and fabrication of Stainless Steels. Whatever your problem in Stainless fabrication, performance or new developments, the Eastern Stainless Technical Staff will furnish you with up-to-date information.

JMLCo. B-B1

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STEEL CORPORATION
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Distributors' stock available in most areas.

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PERKINS

CALENDER ROLLS

No calender can be any better than the rolls in it

B. F. PERKINS & SON, Inc.

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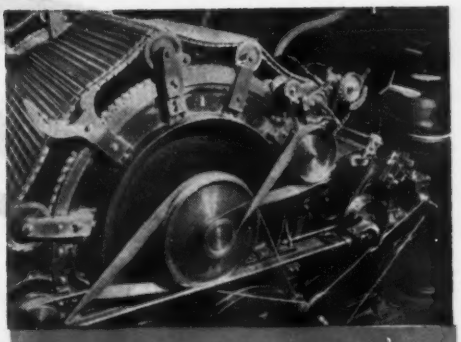
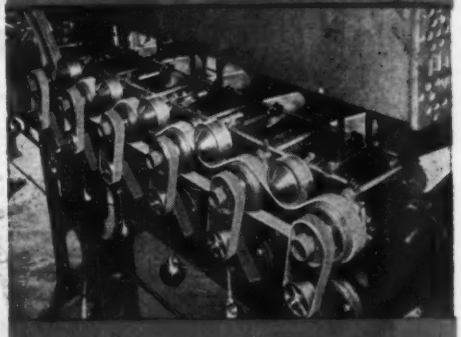
THE LARGEST MANUFACTURERS OF ROLLS IN THE WORLD

Gilmer BELTS

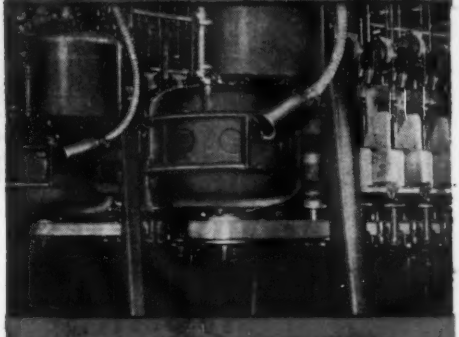
A highly specialized line for the textile industry



GILMER KABLE KORD LICKERIN BELTS. A contactor and power belt in one. Noted for exceptional grip, low stretch, small slippage and high tensile strength. Stand up long in service.



GILMER HEVALOID GAINER BELTS. Made under Hevaloid patent with Neoprene compound, which provides high coefficient of friction. For precision work at 9000 f.p.m. Resist oil, heat, stretch and slippage.



GILMER ENDLESS CORD SPINNER BELTS. Built with continuous cord construction to assure smooth and uniform spindle speed. A belt of high tensile strength, low stretch and long-life.

GILMER KABLE KORD BELTS and BELTING. Meet practically every flat, power belt need. Endless and non-endless. "Two belts in one"—contactor and power. Tight gripping, hard pulling, long wearing.

Long and close association of Gilmer engineers with the textile industry has resulted in the development of an extensive line of belts covering practically every power transmission need.

The Gilmer line ranges from small-diameter, high-speed belts to large, hard-pulling power belts that are capable of handling any load. There are Gilmer V-Belts, flat belts, round belts—endless and non-endless—and of varied types of construction and treatment to meet each specific need.

If there is a power transmission problem in your mill, it will pay you to discuss it with the Gilmer Engineering Staff.

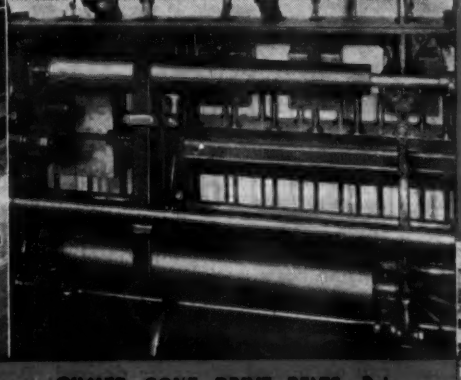
OTHER GILMER BELTS include Endless Round Belts for carding machines, Endless Cord Spinner Belts for silk throwing, etc. All are completely described in the handbook, "Gilmer Belts for the Textile Industry"—a book that simplifies the specifying of belts for a large majority of drives. Write for your FREE copy today.

L. H. GILMER COMPANY

TACONY, PHILADELPHIA 35, PA.

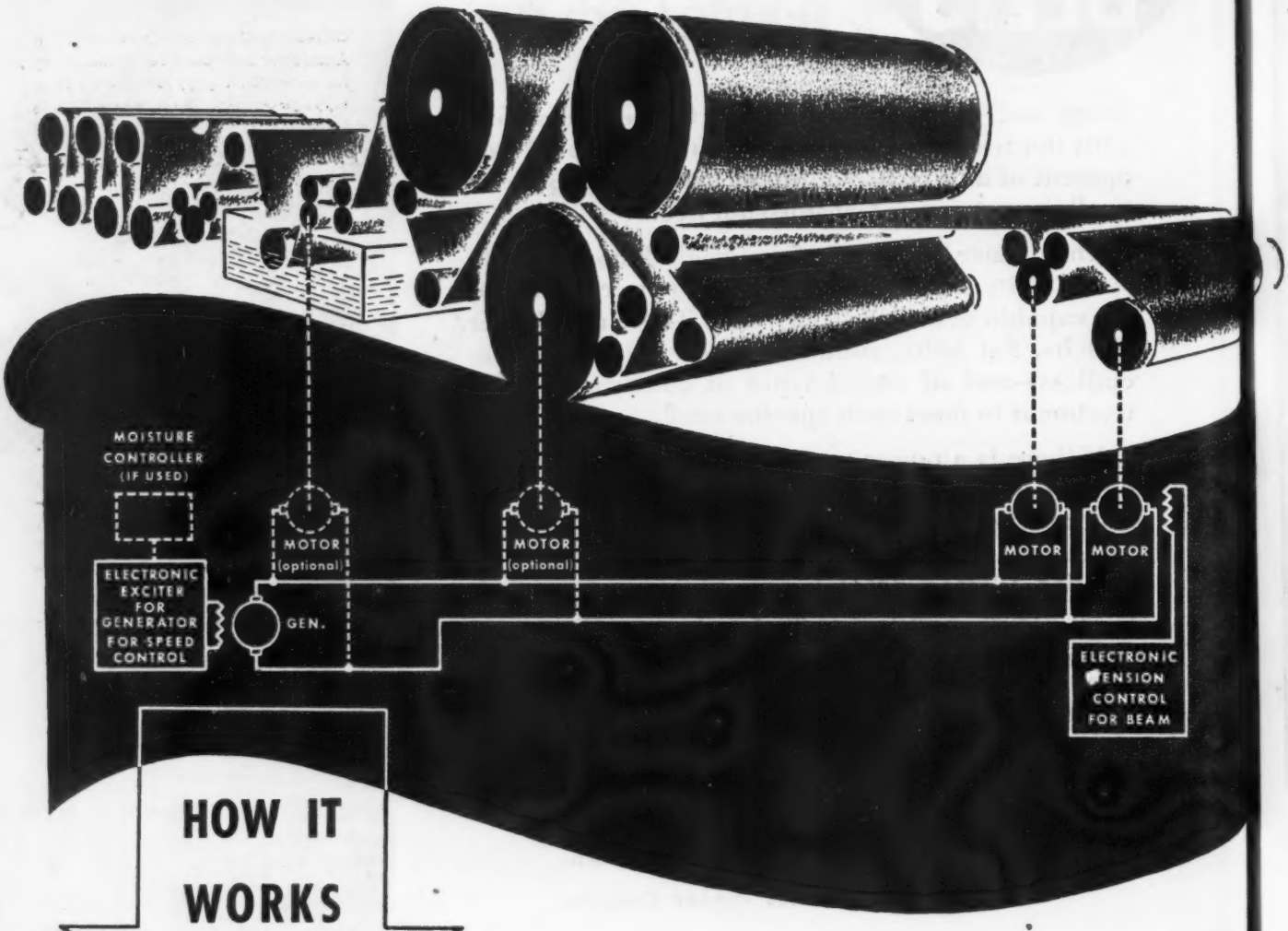
Division of United States Rubber Company

GILMER V-BELTS—FHP and multiple. Have many applications. Space saving, silent, shock absorbing. Built to lock in the grooves with a non-slip grip. In standard and special sizes.



GILMER CONE DRIVE BELTS. Reinforced multiple-jacket edges and rubber-locked internal structure check wear and unraveling from action of shifter forks. Assure longer life in the toughest service.

Eliminates

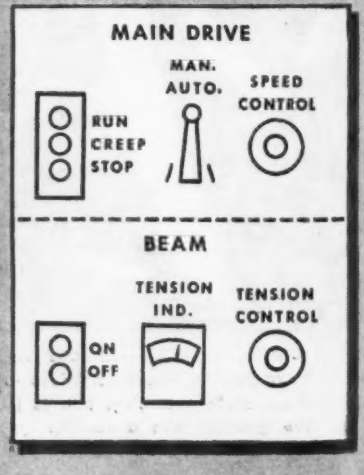


HOW IT WORKS

This G-E slasher drive is of the adjustable-voltage type, with electronic control of both yarn speed and beaming tension. The wind-up beam has its own motor, and the rest of the slasher is driven by one or more motors, depending upon individual requirements. Direct-current power is supplied to the driving motors by a motor-generator set. An electronic exciter controls the generator output voltage which, in turn, determines the speed at which the slasher operates.

Tension at the wind-up beam is controlled by an electronic tension regulator. If individual driving motors are used on each of the other elements, rheostatic controls provide tension adjustment between elements. If only one motor and line shafting are used to drive everything except the beam, mechanical speed variators are employed to regulate tension between sections.

For convenience, complete control of the slasher can be centralized in an operator's panel. Auxiliary control stations can be placed wherever desired. Beam tension is shown on an indicating instrument, and is preset with a simple selector dial.



GUESSWORK IN SLASHER OPERATION

New G-E drive—*ELECTRONICALLY CONTROLLED*—gives consistent, accurate control of tension and speed

To meet the demand for a precise method of measuring and controlling yarn tension and speed in slashers, General Electric has developed a highly practical, electronically controlled slasher drive. Because this new drive does so much to eliminate "feel" or guesswork in slasher operation, you can now consistently supply your looms with superior beams, wound with high-quality warps of uniform strength and moisture content.

The G-E slasher drive is only one of a number of G-E automatic tension-control systems designed to lessen dependence on guesswork in many textile-mill processes. Others include duo-dye-jig drives, yarn-winder drives, and warper drives.

The replacement of older, less efficient drives by modern G-E drives with electronic controls makes possible basic economies in your mill. With close tension and speed control, you can reduce seconds substantially and assure yourself of fine-grade fabrics. Maintenance of electronic equipment is simple and entails little specialized experience. A G-E application engineer will be glad to discuss further with you the advantages of electronically controlled drives. ***General Electric Company, Schenectady 5, N. Y.***

THIS NEW G-E SLASHER DRIVE OFFERS THESE 7 ADVANTAGES

1. Yarn tension at the beamer can be selected for various yarn sizes and numbers of ends.
2. Tension, once selected, is maintained automatically by a stepless electronic control which makes an infinite number of adjustments as the diameter builds up.
3. Wet tension, between size box and cylinders, can be adjusted by manual dial setting.
4. Running and creeping speeds are preset. This means that the slasher may be stopped and restarted and yet will always automatically return to the preset speed.
5. Any danger of damaging the yarn when starting and stopping the slasher is avoided because of the smoothly controlled rates of acceleration and deceleration.
6. Yarn speed can be controlled automatically from standard moisture control equipment.
7. Friction devices and much gearing are eliminated.

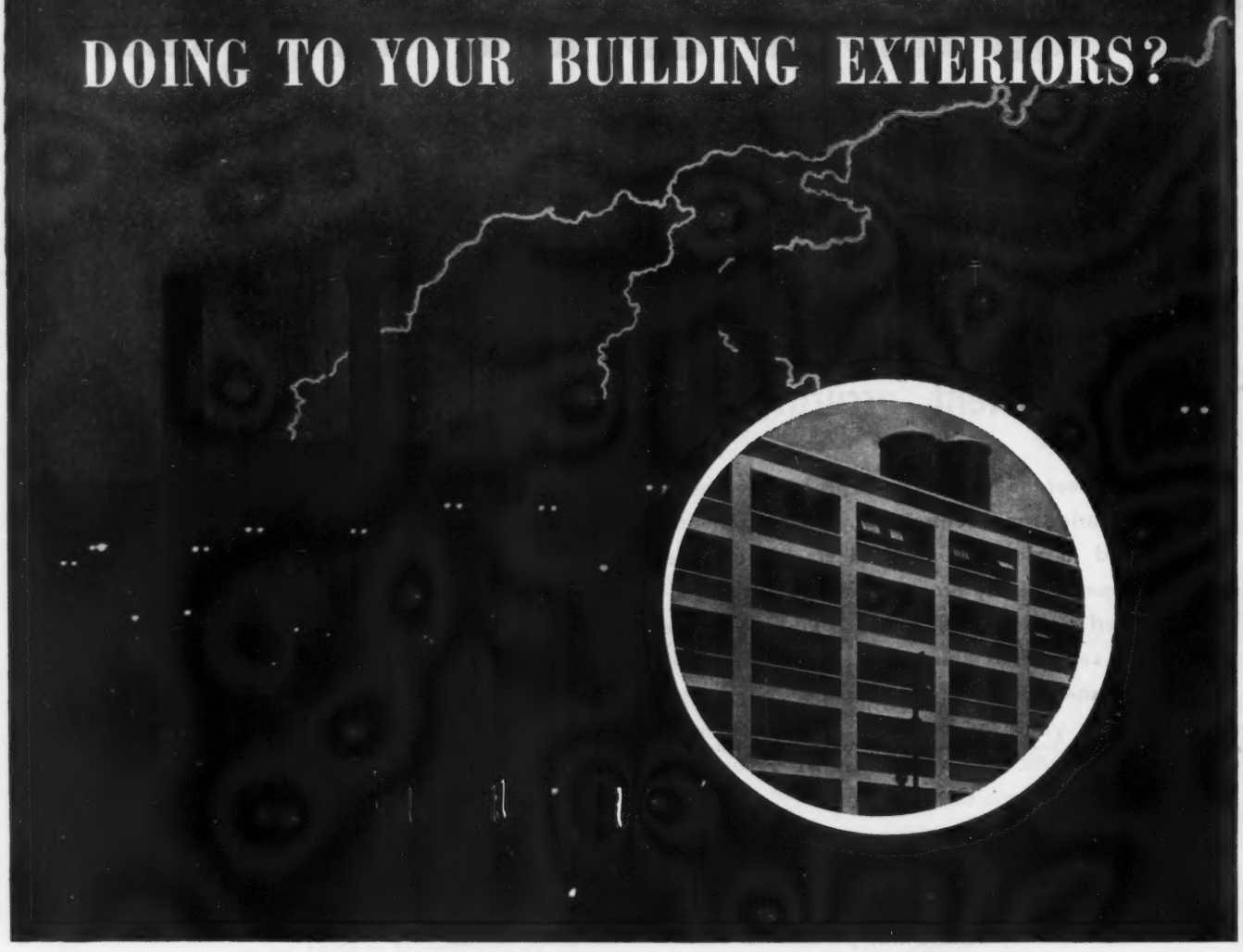
GENERAL ELECTRIC

661-25-8488

DRIVE SYSTEMS FOR TEXTILE MILLS

Buy all the BONDS you can—*and keep all you buy*

WHAT IS WEATHER-BOMBING DOING TO YOUR BUILDING EXTERIORS?



Raincoat Your Structures Now with Waterfoil

The Horn Research Laboratories took ten years to develop and test Waterfoil. It is unlike any other masonry protective coating. Waterfoil is manufactured of irreversible inorganic gels. These gels bond chemically and physically to concrete, stucco, or brick, to form a dense hard integral protective outside layer.

The Waterfoil "raincoat" has a microscopic porosity which lets the masonry breathe outwards and at the same time impedes water penetration inwards to prevent reinforcing bar rust, spalling or disintegration. Send today for the Waterfoil literature. It's important.

Horn Products and Methods Protect Millions of Square Feet of Surface Throughout the Nation

HORN PRODUCTS

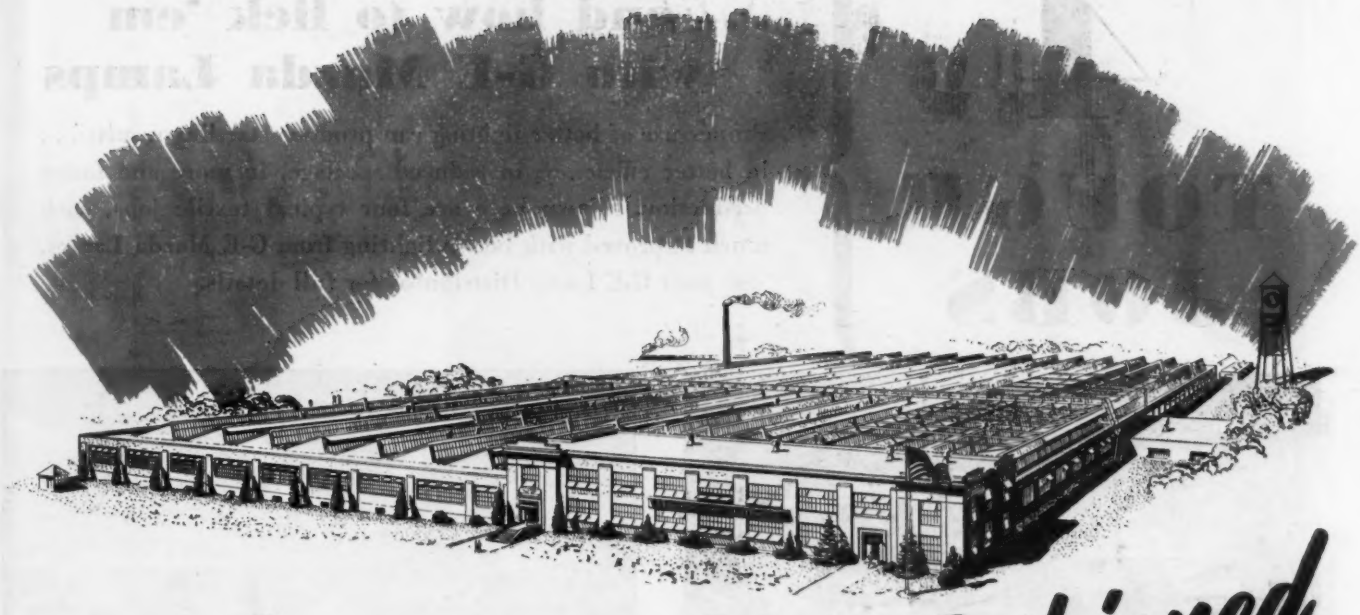
WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

A. C. HORN COMPANY

Established 1897

Manufacturers of Materials for Building Maintenance and Construction • Long Island City 1, N. Y.
Houston, Texas • San Francisco, Calif.



So, We'll BE Old-Fashioned

(IN OUR ADVERTISING)

Ad men tell us that plants haven't been shown in ads for 20 years. We're doing it anyway. Because the kind of plant we run has much to do with the kind of motors we make.

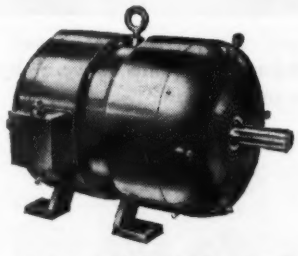
You see above what we call a BIG small plant, (290,000 sq. ft. and 1500 workers). Big enough to build a lot of motors of the kind Star builds. Small enough so we can keep a close eye on all the details that affect quality.

You see a plant that anybody would call modern. And, its equipment is as up-to-the-minute as the buildings, including fine research and testing facilities.

You Don't See the Important Part . . .

No picture can show you the kind of men who build Star Motors, or the way they work. But, come to visit us someday, and you'll see a plant full of real "motor men" . . . men who put the best of themselves, along with the best of materials into the motors they build. See us at our job and we won't need to sell you on making Star your *"Motor Department"*.

With a complete line of standard motors and design know-how that has licked "stumpers" in motor application for many important makers of power-driven products, Star is ready to work with you on any need. Early delivery of some standard motors can be made. For AC or DC motors ⅛ to 200 HP and AC or DC generators to 150 KW, write Star Electric Motor Company, 212 Bloomfield Avenue, Bloomfield, N. J.



AC Fan Cooled Type in Star line of ⅛ to 200 HP motors.

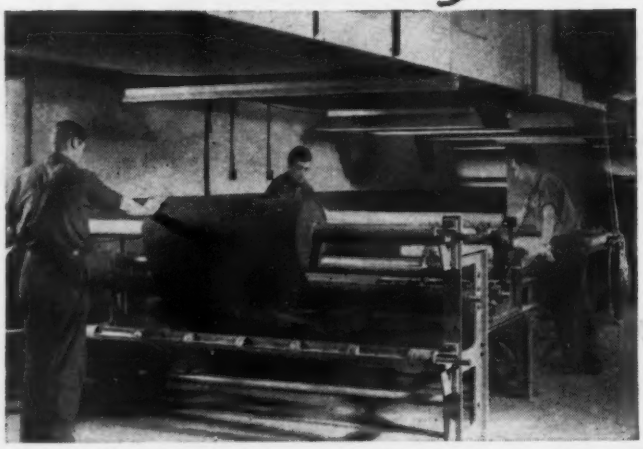
STAR MOTORS

POWER PACKAGED AS YOU NEED IT

4 TOUGH JOBS

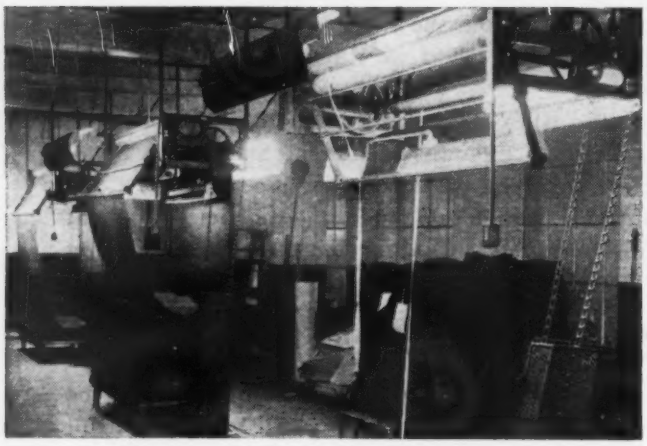
. . . and how to lick 'em with G-E Mazda Lamps

Proper use of better lighting can produce startling results . . . in better efficiency, in reduced spoilage, in more and faster production. Shown here are four typical textile jobs, each much improved with better lighting from G-E Mazda Lamps. Ask your G-E Lamp Distributor for full details.



1 **Instant detection** of flaws in finished carpeting enables this mill to speed inspection and avoid rejects. With better on-the-spot lighting—using G-E Mazda Fluorescent lamps—even unskilled workmen can keep production up, spoilage down.

2 **Accidents happen** in poorly lighted rooms . . . around fast-moving machinery. Above, the low-brightness, high-level illumination from G-E Fluorescent lamps gets in and around machine parts, helps operators see better, faster, more accurately.



3 **Special machine** lighting jobs — like this one using G-E Fluorescent lamps—are extremely important in maintaining efficient production, with less down time on critical equipment.

4 **Extremely fine** detail work calls for easy seeing and high visibility — such as G-E Lamps provide above. Why not consider these advantages in your mill?

Production starts with good lighting. Remember this when you buy lamps: the constant aim of G-E Lamp Research is to make G-E Lamps STAY BRIGHTER LONGER.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Hear the G-E radio programs: "The G-E All-Girl Orchestra", Sunday 10:00 p. m. EWT, NBC; "The World Today" news, Monday through Friday 6:45 p. m. EWT, CBS; "The G-E Houseparty," Monday through Friday 4:00 p. m. EWT, CBS.

BUY MORE WAR BONDS . . . AND HOLD 'EM

for tank heating of liquids...

SK Sparger Nozzles

Simple — Inexpensive — Trouble-Free —

When SK Sparger Nozzles are used for tank heating of liquids, noise and vibration are eliminated and steam cannot come through to the surface when the installation is properly designed. Furthermore, the use of these nozzles insures uniform circulation of liquid and even distribution of the heating effect.

Design

Cast in one piece, SK Sparger Nozzles are simple in design. There is nothing about them to get out of order. They operate under any hydraulic head and are readily adaptable to any arrangement for any capacity.

Installation

SK Sparger Nozzles are readily installed. The steam line is simply drilled and tapped to take the ⅜ inch pipe thread of the nozzle. The size of the steam line depends upon the number of nozzles installed but should be no smaller than 1½ inch to allow for tapping.

Pipe layouts are made according to the tank area and full flexibility of spacing is possible to accommodate the amount of heating desired as well as irregularities in shape of tank.

For full description and a guide to figuring capacities, send for Bulletin 3-A Supplement.

JET APPARATUS • HEAT TRANSFER EQUIPMENT • STRAINERS • CONDENSERS AND VACUUM PUMPS • OIL BURNING EQUIPMENT • ROTAMETERS AND FLOW INDICATORS RADIAFIN TUBES • VALVES • SPRAY NOZZLES AND ATOMIZERS • GEAR PUMPS

SCHUTTE & KOERTING COMPANY

Manufacturing Engineers

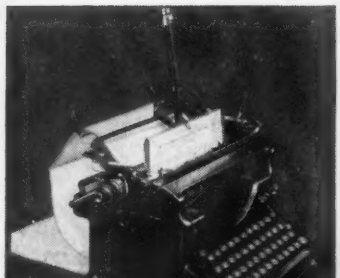
1161 Thompson Street, Philadelphia 22, Pa.

● Hold on a second! Don't get the air blue with *idle curses*—find out what's to blame for errors. Your employees? Probably not . . . they don't like errors any more than you do. Well then—how come errors in the first place?

Most likely, your error trouble is caused by the fact that too many people have to write and re-write the same information—and every time a form must be recopied, there's a chance for mistakes. Or, perhaps, errors are due to poor copy reproduction—fuzzed carbon copies that are unreadable, defeat legibility. If so, then here is your solution—Uarco forms. Forms with carbons that assure clean detailed copies—forms that allow one person to type or write enough copies at one time for all departments.

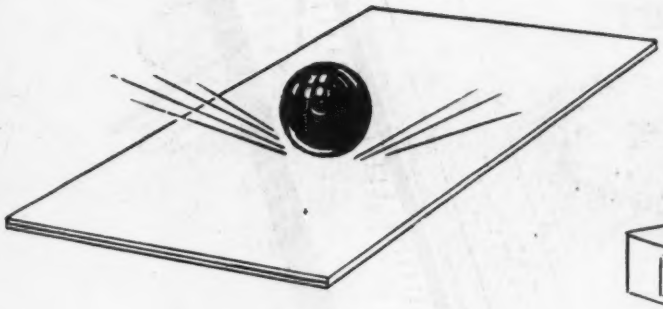
Today see what Uarco has to show you. For Uarco has made a science of creating better forms . . . forms scientifically designed for individual businesses, that pay off in savings of time and money as well as lessening the possibility of errors.

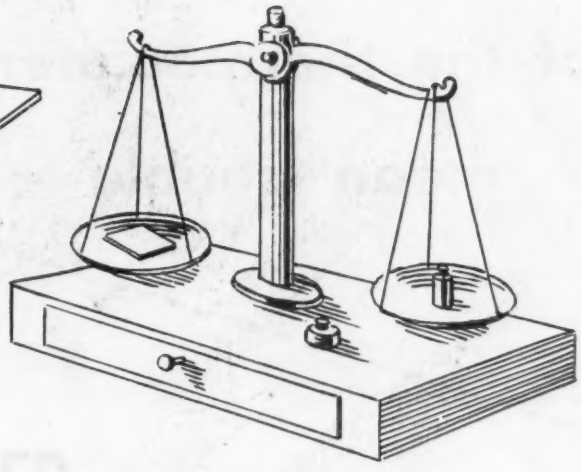
Spend a half hour with the Uarco representative. You will be amazed at the substantial cut in errors the *right form* will bring you. Call him today—or write.

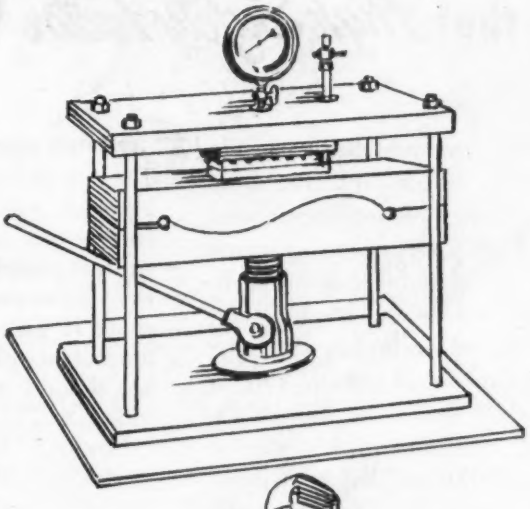


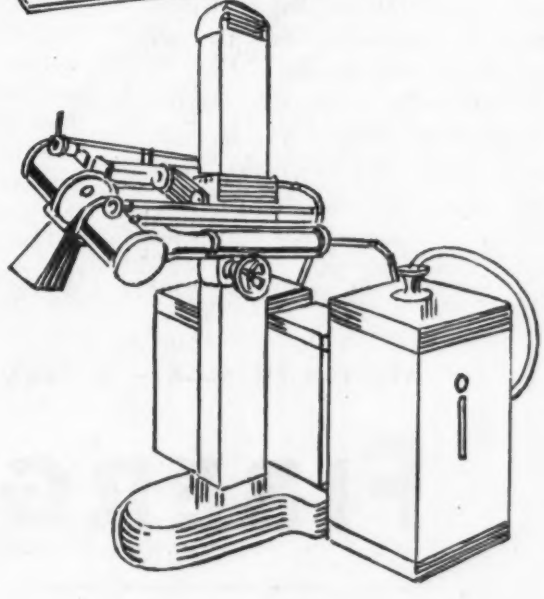
For instance, **this is the Uarco Speed-O-Form . . . one of many time-saving forms. In five seconds, any standard typewriter can become a continuous forms biller. Eliminates carbon stuffing, paper alignment and other such time-taking routine jobs. Two to six copies are made at once, and forms in back of the machine continuously feed the typewriter as typist types. Write for full information.**

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*









MATERIALS ARE TESTED AS NEVER BEFORE!

THE search for materials with new properties, and for substitutes for unobtainable materials with well known properties has been intense and prolonged during the war.

It has turned up some interesting, useful facts and has led to improvements that were not imagined a few years ago.

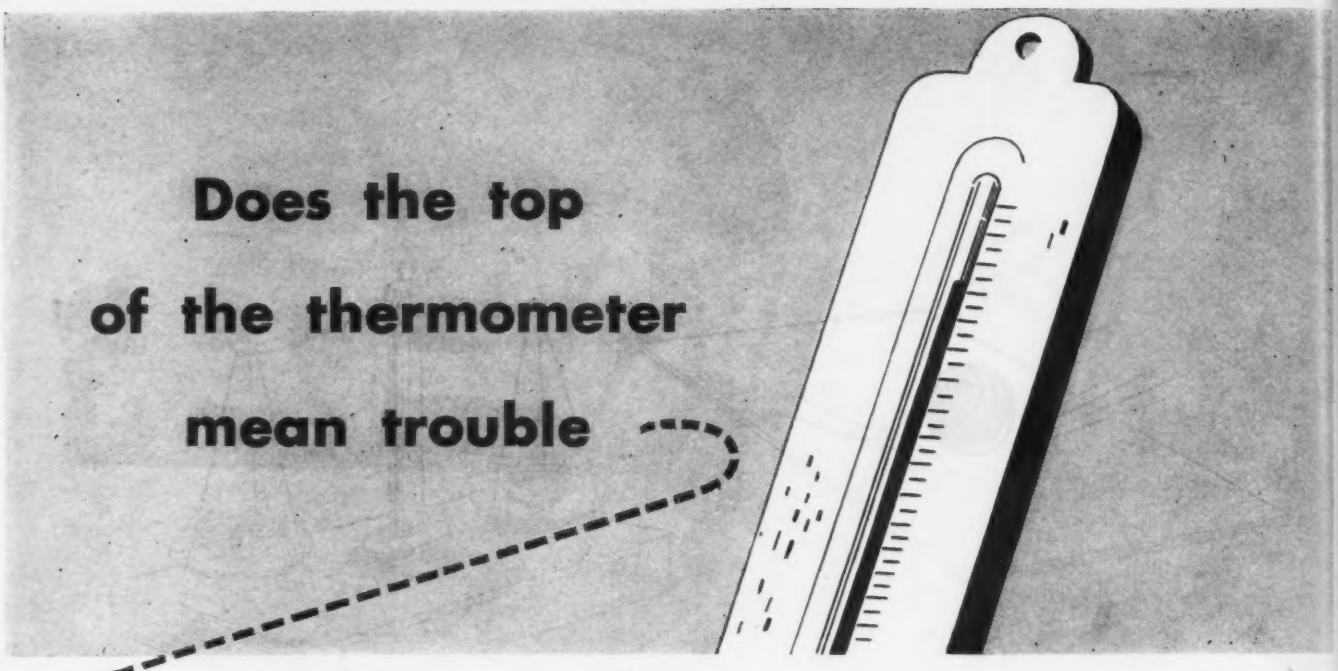
Formica's product, adapted to many war uses, has been one center of this intensified scientific attention and some new grades especially adaptable to textile uses have been developed.

Chemical resistance has been greatly improved so that materials for many parts for producing rayon will be much longer lived and more satisfactory than they have ever been before. Mechanical parts for textile machinery such as picker sticks, separators, loom box linings and similar uses have been made stronger, more durable, more smoothly wearing.

Formica engineers will be glad to give the facts to manufacturers of textile machinery and those responsible for their maintenance.

FORMICA

THE FORMICA INSULATION COMPANY, 4668 SPRING GROVE AVENUE, CINCINNATI 32, OHIO



that *High Safety Factor* Electrical Insulation can prevent?

Many an engineer gets the jitters when the mercury shoots up. For heat, either ambient or internally generated, is one of the chief causes of motor trouble. Because most motors are designed by experts and manufactured by experienced craftsmen, they give years of economical service. Yet, the records show that motor failure, due to heat, overloads, dirt, corrosive acids, moisture and the human element, still imposes a heavy time-and-dollar loss on industry.

That is why Fiberglas* Insulation Materials are being used on more and more motors. It provides the "extra" protection against the conditions which cause most motor burnouts — affords the *high safety factor* which prevents many unnecessary losses.

OPERATORS CHANGED THE DESIGNER'S PLANS

The original design for a metal melting tank specified the use of one-horsepower motors to drive a centrifugal pumping system. The motors were to run into the furnace on tracks about 18 inches above the surface of the molten metal. After the operation was completed, the motors were to be withdrawn.

However, in order to speed up production, and because the tracks warped, operators left the motors over the melting tank rather than remove them. The life of the motors (insulated with an organic material) was about two weeks.

The first motor to fail was rewound with Fiberglas. The motor was then installed permanently, directly over the molten metal, where it has been operating for nearly a year in an ambient of at least 250° F. The operation cycle is three minutes out of every thirty.

You, too, may be able to effect similar time and money savings by using or specifying *high safety factor* insulation. Start now to give your motors and other electrical apparatus the advantages which only Fiberglas Insulation Material affords. For complete information consult your electrical repair shop, the nearest Fiberglas Distributor, or write for a copy of catalog EL 44-7. *Owens-Corning Fiberglas Corporation, 1864 Nicholas Bldg., Toledo 1, Ohio.*

In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.

ASK FOR FIBERGLAS—IN YOUR NEXT NEW MOTOR—AND ON YOUR NEXT REWIND

FIBERGLAS

*T. M. Reg. U. S. Pat. Off.

ELECTRICAL INSULATION MATERIALS

THERE'S A COMPLETE LINE OF FIBERGLAS ELECTRICAL INSULATIONS

YARNS • TAPE • CORD • SLEEVING • CLOTH AND OTHER FORMS. Also available in: Magnet wire, Lead wire, Special wires, Varnished cloth and tape; Mica combinations: Laminates, Saturated sleeving, Varnished tubing, Pressure-sensitive tapes, Special products.

First in America to be completely integrated from basic raw materials to finished dyestuffs . . . . first in America to make every class of aniline dye and color, the name National Aniline is today the synonym for dependability . . . wherever aniline dyes and colors are used.

National Aniline Division

ALLIED CHEMICAL & DYE CORPORATION

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For Manufacturers and Merchants

Inquiries as to our services solicited

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ESTABLISHED 1840

It's what happens

HERE

and

HERE

that destroys ordinary belts

—but not Condor Compensated

PATENTED

TRADE MARK REGISTERED

with its EQUALIZED PLY STRESSES

In ordinary belt, as it goes around the pulleys, there is a constant alternation of "stretch and buckle" stresses—different for each ply—which speed outer ply rupture, shorten belt and fastener life.

The way the Strength Members are made and applied in the construction of Condor Compensated Belt lets it flex freely and with ***equalized ply stresses.*** This patented and exclusive ***Compensation*** principle represents what is probably the most beneficial development in belt construction of the last quarter century.

Reports like these indicate the kind of service you get from Condor Compensated:

An 8-ply, 16-inch Condor Compensated Belt on a paper mill drive is "still performing like new" after 9 years.

"100% more starting load capacity without appreciable belt slip." . . . Many users report 3 to 4 times longer fastener life from Condor Compensated.

"After the second flood receded, we again dried out the belts. Today they are as good as the day we put them on (2 years) and we have not even had to take them up."

Advantages of Compensation

In all styles of Condor Compensated Belt, you get these belt-saving, production-building advantages:

1. Ruptures in outside ply eliminated
2. Freedom from ply separation
3. Longer fastener life
4. Can be operated over smaller pulleys
5. For heavy loads, plies may be increased with same pulleys
6. Higher overload capacity or margin of safety
7. Less wear on pulley side
8. High production efficiency
9. Material reduction in belting costs

Also available with Style H surface for low tension operation, Style F with friction surface on the pulley side, and Style B with bareback surface on pulley side, where some slip is desirable.

Improve your production now with Condor Compensated Belt. Write for Bulletin.

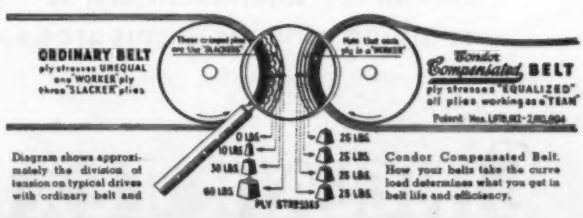


Diagram shows approximately the division of tension on typical drives with ordinary belt and Condor Compensated Belt. How your belts take the curve load determines what you get in belt life and efficiency.

CONDOR BELTS are now made in the dark, war-time color.

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES and FACTORIES . . . PASSAIC, NEW JERSEY

SINCLAIR has the ANSWERS to Your Lubrication Problems

FOR EXAMPLE:

OIL FOAMING in comb boxes — (1) makes it impossible to determine the liquid oil level; — (2) excessive foaming frequently leaves insufficient oil in the boxes for adequate lubrication. Foaming is avoided and constant efficient lubrication insured by use of SINTURLITE OILS which are both non-foaming and rust preventive.

GENERAL PURPOSE GREASE is a must in every plant. SINCLAIR BEARING GREASE No. 2 has all-around utility value, is ideal for grease-lubricated plain bearings, and is readily handled in the usual dispensing equipment.

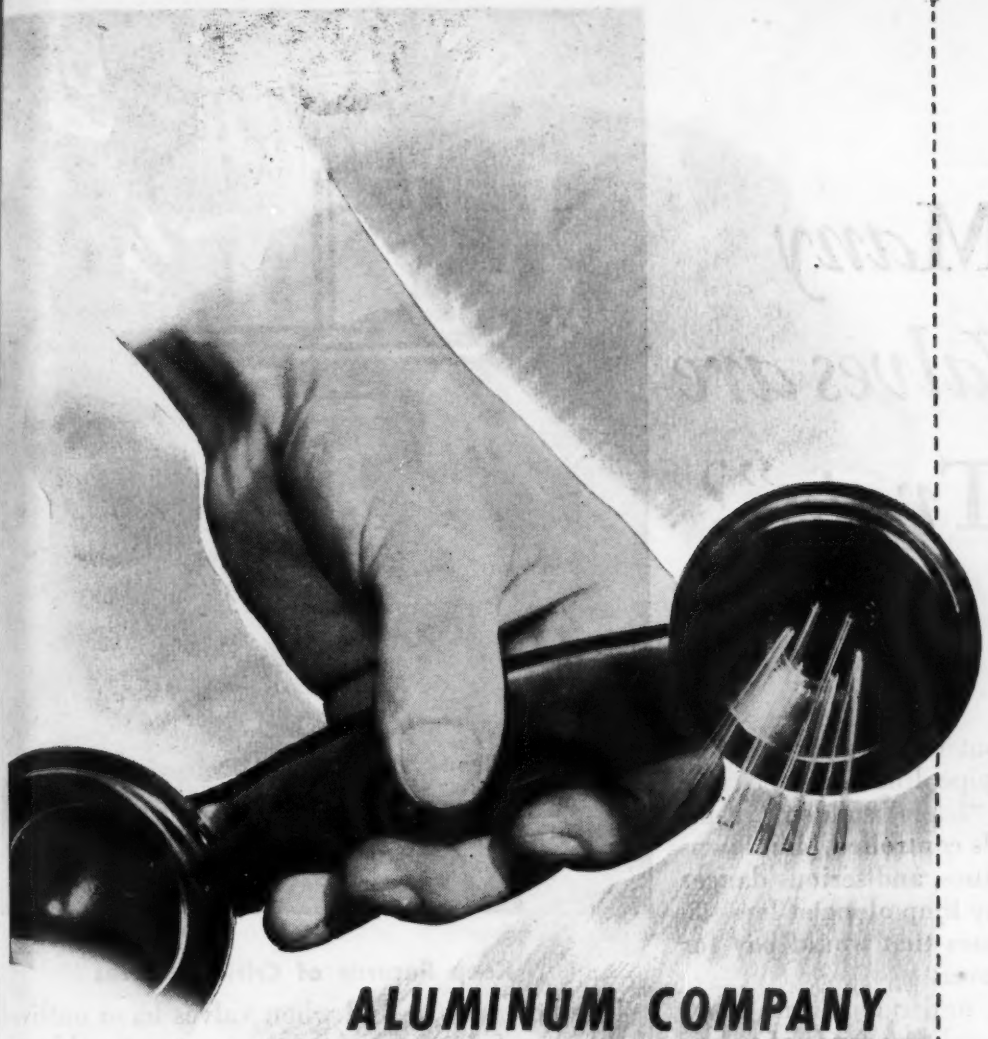
PROPER LUBRICATION for all types of mill equipment is assured by Sinclair Textile Lubricants because they were specially developed through long research, practical service tests, and cooperation of machinery manufacturers. If your spinning room problems are excessive bolster wear, over-heating, and power loss there's a Sinclair Lily White Oil of correct viscosity to help eliminate these troubles.

* * *

Have you the Sinclair Textile Flow Chart, a helpful guide to efficient lubrication? It's free.

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.



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Service on all Magnesium Products

What alloy to use—Sand casting, die or permanent-mold casting, forging, shapes or sheet—you'll find help on this lightest of the light metals, Magnesium, as near as your telephone. Call any Alcoa office—

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AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

How Many of your Valves are "Booby Traps"?

Worn-out valves at the critical control points on your pipe lines are veritable "booby traps". They may "let go" suddenly, causing high losses in materials controlled, shutdowns of important processing lines, and serious danger to personnel. Or, they may limp along at low efficiency, causing steady losses that would pay for replacement many times over.

Wartime service loads, under abnormal operating conditions, have placed thousands of valves on the retirement list . . . worn beyond the point where they can be satisfactorily and economically reconditioned. How many are still in your pipe lines?

"NO 'BOOBY TRAPS' ON MY LINES!"

With the Jenkins Valve Record Sheets you can keep continuous data on any valve's condition, and tell when it will cost *less* to replace it.

Set down the condition of all important valves at each periodic inspection, and the frequency and costs of repairs and parts renewed.

For sample Record Sheets, send the coupon below.

Keep Records of Critical Valves

The best way to find when valves have outlived their usefulness – before they cause trouble – is to keep adequate maintenance records. Jenkins Engineers have prepared useful "Valve Record Sheets", available on request, to help you check and record the condition of your valves, and find the potential "booby traps".

Make Replacements with Jenkins Valves

Extra value is built into every Jenkins Valve by better materials, better design, better workmanship. To make sure of the *lowest cost in the long run*, select the replacements you need from the Jenkins Catalog . . . over 600 patterns for every service.

Jenkins Bros., 80 White Street, New York 13; Bridgeport, Conn.; Atlanta, Boston, Philadelphia, Chicago, San Francisco. Jenkins Bros., Ltd., Montreal, London.

LOOK FOR THIS JENKINS DIAMOND MARK

JENKINS BROS., 80 White St., New York 13, N. Y.

Please send me a set of the Jenkins "Valve Record Sheets"

Name.....

Company.....

Address.....

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JENKINS VALVES

SINCE 1864

For every Industrial, Engineering, Marine, Plumbing-heating Service . . . In Bronze, Iron, Cast Steel and Corrosion-resisting Alloys . . . 125 to 600 lbs. pressure.

Sold Through Reliable Industrial Distributors Everywhere

The Frozen Bearing that Gave the Foreman a "Hot-Foot!"

► THE SCENE: The bustling plant of the Richmond Hosiery Mills, Rossville, Ga., one of the country's largest manufacturers of hosiery, and hosiery yarns.

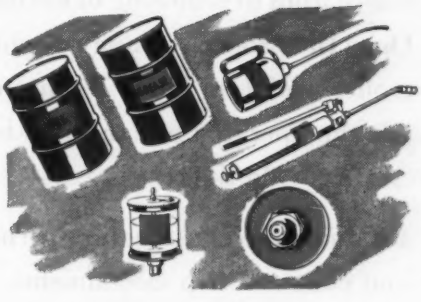
► THE PLOT: A machine is clicking off the footage, when suddenly it happens! . . . A tell-tale wisp of smoke reveals that a motor bearing has burned out and frozen stiff. Another machine and operator that

will "cool their heels" until the bearing is replaced. Another "hot-foot" for the foreman from the boss!

The cause? Lubrication of hundreds of machines was dependent upon a crew of oilers . . . some of them inexperienced. Often, hard-to-get-at lubrication points were overlooked, or some bearings got too much lubricant, or too little, or the wrong kind. Machines were down and so was production.

► THE HAPPY ENDING: After a complete analysis of the Richmond Hosiery Mills plant by Alemite Lubrication Specialists, the Alemite Coloroute Plan of Lubrication was recommended and installed. All lubrication points—fittings, gears and oil holes—were plainly marked with identifying color symbols that told the oilers *where* to lubricate, *when* to lubricate, and *what* lubricant to use. "Since installing the Coloroute System..." says the Richmond management, "motor failures from burned out bearings have almost ceased in our plant."

Coloroute is foolproof! Each lubricant container and gun is "color-identified" to correspond with color symbols on the machines. The plan is so simple, so easy to explain, that even inexperienced help can easily follow it.



To Executives: Have an Alemite Lubrication Specialist explain the "Coloroute Plan of Lubrication."

He has case histories to show how the number of lubricants required to do the job can be reduced by 30% to 75%. The economies and benefits of Coloroute are applicable to any size plant, large or small. Complete information, without obligation. Just write, Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.

ALEMITE

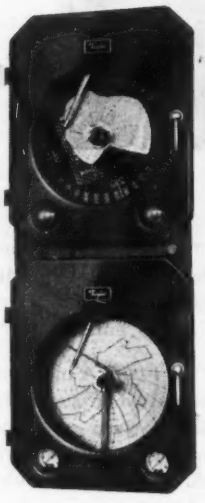
First in Modern Lubrication

Associate Product of STEWART WARNER

CONSULTATION • EQUIPMENT • LUBRICANTS • ENGINEERING • MAINTENANCE

YOU'RE HEADED FOR A BIG SURPRISE WHEN YOU TRY THIS WAY OF COOKING SIZE!

MANY mill men find it hard to believe that a Taylor Fulscope Time-Schedule Controller will carry out a size cooking operation single-handed. Then after they try it they write us warm letters telling how it gives them more uniformly sized yarn; saves starch, sizing compounds, steam and time; eliminates waste from overflowing of kettles; and increases the general quality of the warps. Once the proper cooking schedule has been established, the Time-Schedule Controller will reproduce it automatically—not once, but time and time again. All the operator has to do is load the kettle, push the button, and let Taylor Accuracy do the rest!



Its dual-case construction permits easy accessibility to both control mechanism and cam and trip mechanisms.

Your Taylor Field Engineer will help you to set up the exact schedule you need for best results. Call him! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

ARMY E NAVY

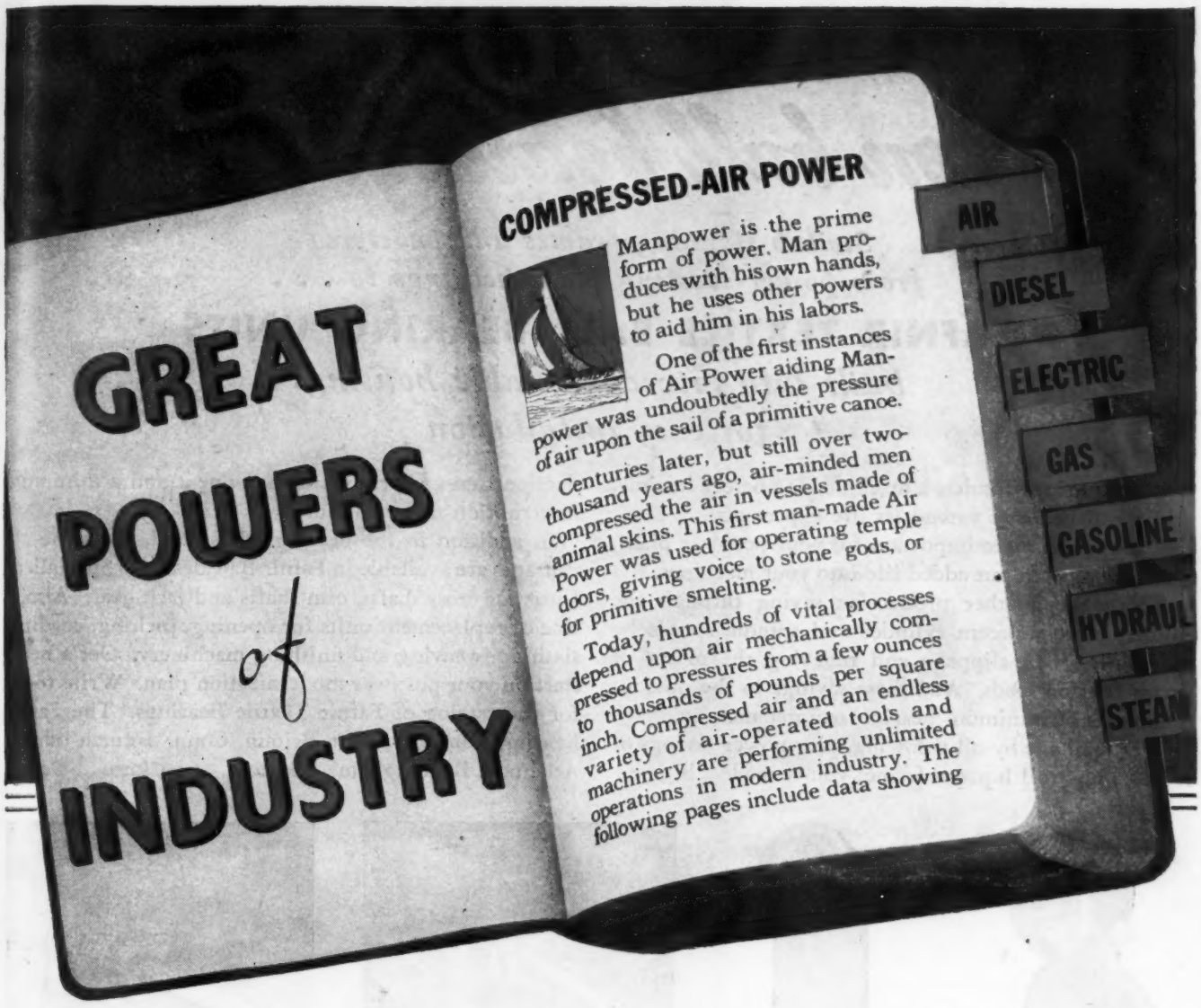
Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

BUY ANOTHER WAR BOND TODAY!


GREAT
POWERS
of
INDUSTRY
COMPRESSED-AIR POWER
Manpower is the prime form of power. Man produces with his own hands, but he uses other powers to aid him in his labors.
One of the first instances of Air Power aiding Manpower was undoubtedly the pressure of air upon the sail of a primitive canoe.
Centuries later, but still over two-thousand years ago, air-minded men compressed the air in vessels made of animal skins. This first man-made Air Power was used for operating temple doors, giving voice to stone gods, or for primitive smelting.
Today, hundreds of vital processes depend upon air mechanically compressed to pressures from a few ounces to thousands of pounds per square inch. Compressed air and an endless variety of air-operated tools and machinery are performing unlimited operations in modern industry. The following pages include data showing
AIR
DIESEL
ELECTRIC
GAS
GASOLINE
HYDRAUL
STEAM

This book is not for sale . . . as far as we know, it does not exist.

If it did, such a book would point out the types of work that can be accomplished by *several* forms of motive power used by industry . . . the problems that can be solved *better by one* than by any other . . . the things that can be done by *only one* of them . . . and the still other jobs that require *combinations* of several powers.

In the absence of such a book, we must all depend upon experienced engineers and manufacturers to advise us of the very latest practices in their particular fields.

So if you are not thoroughly familiar with *Compressed-Air Power* . . . what it is doing for others, and what it can do for you . . . get in touch with an Ingersoll-Rand Engineer. He knows Air Power and its applications.

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Put your modernization program

"on ball bearings"!

Switch spinning frames and twisters
from power-wasting plain bearings to . . .

FAFNIR TEXTILE BALL BEARING UNITS

built into interchangeable housings
for easy installation

Plain bearings obsolete a machine long before its time, while ball bearings extend its life expectancy.

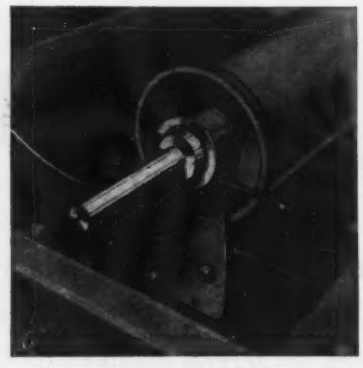
What's even more important for your post-war plans, ball bearings can put added life into your machines.

You make another production saving through the higher, more uniform cylinder and spindle speeds by eliminating belt slippage and relieving the motor of excess friction loads. Add these savings to the obvious economies of minimum bearing maintenance, stoppage of yarn spoilage by oil throwing, plus power savings of from ¾ h.p. to 1 h.p. per frame: you've made a big production step-up for a small investment and a minimum interruption of operation.

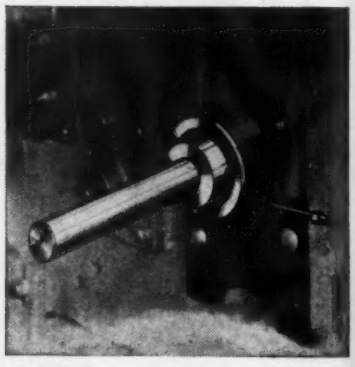
In addition to the bearings illustrated, the same advantages are available in Fafnir Ball Bearings Specialized Units for cross shafts, cam shafts and jack gear. Also, a line of replacement units for opening, picking, cording, slashing, weaving and finishing machinery. Get a head-start on your post-war modernization plan. Write today for the catalog of Fafnir Textile Bearings. The Fafnir Bearing Company, New Britain, Conn. Branch offices: Atlanta . . Birmingham . . Boston . . Charlotte . . Dallas.

Fafnir intermediate cylinder arbor unit for Whitin Spinning Frame.

Fafnir gear end unit for Whitin Spinning Frame.

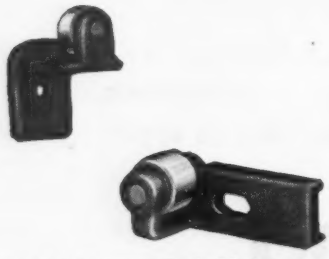


Fafnir intermediate cylinder arbor unit applied to Saco-Lowell Spinning Frame.

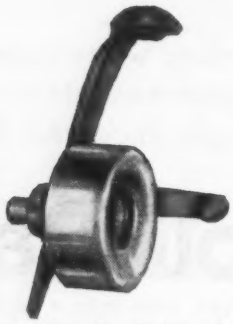


Fafnir gear end application on Saco-Lowell Frames.

The ability of ball bearings to operate efficiently in all positions handles the one-sided pull of spinning frame and twister cylinders without wear or vibration, prolonging the life of tapes, cylinder and the entire machine.



Fafnir Pitman Roll Units are unaffected by accumulated fly. Thus binding of roll and scuffing of cam face is eliminated. Complete freedom from drag gives uniform bobbin build.



Tape Tension Pulley for Spinning Frames and twisters.

★ 2205

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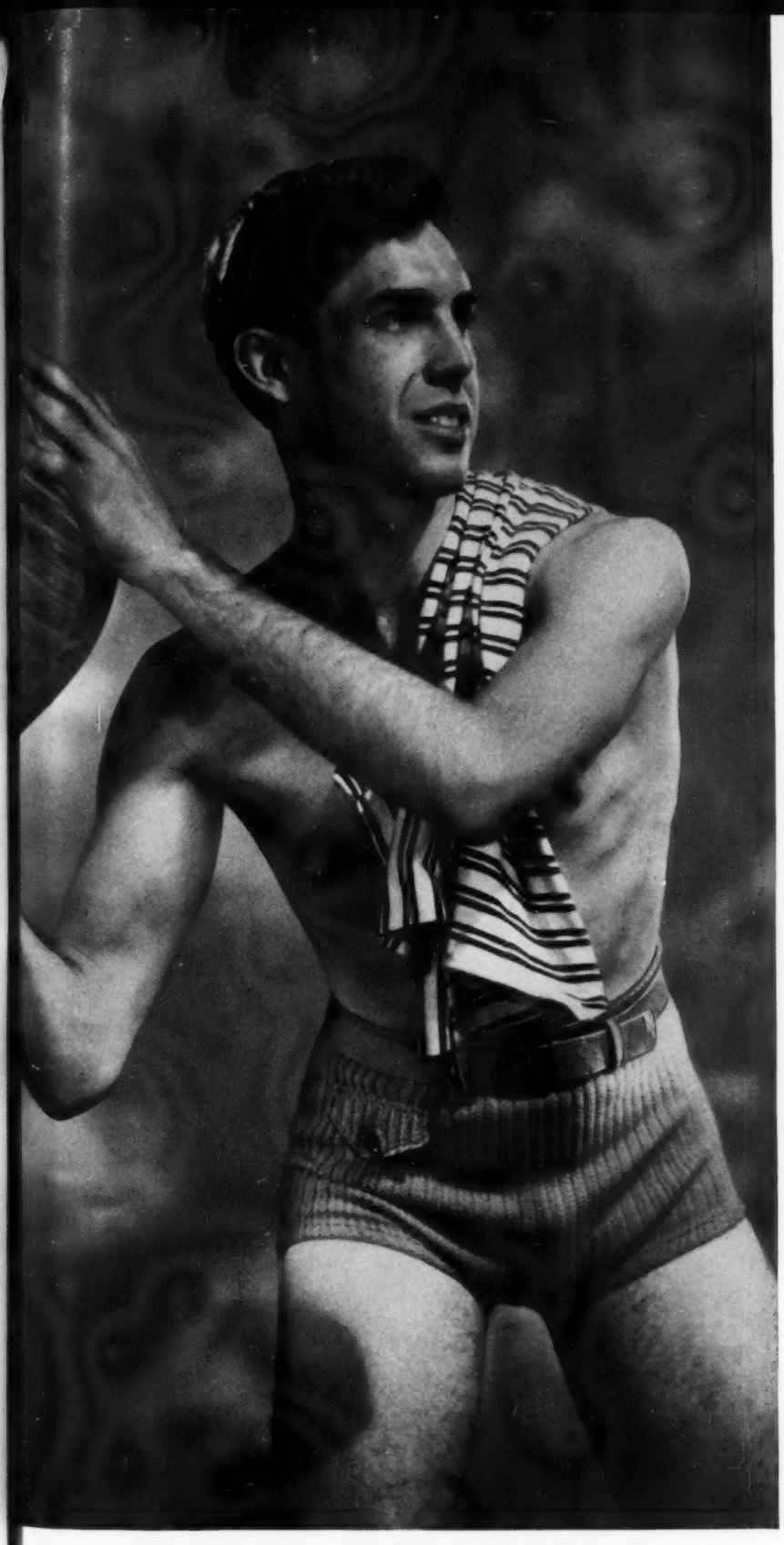
BALL BEARINGS

Most Complete Line in America



DEPENDABLE *Service*

in swimsuits as in other knitted merchandise is a matter of sturdy, serviceable knitting. You can help to give your products this essential quality through the use of Torrington Needles—machine tempered and finished for greater uniformity!

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A.
Established 1866
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis
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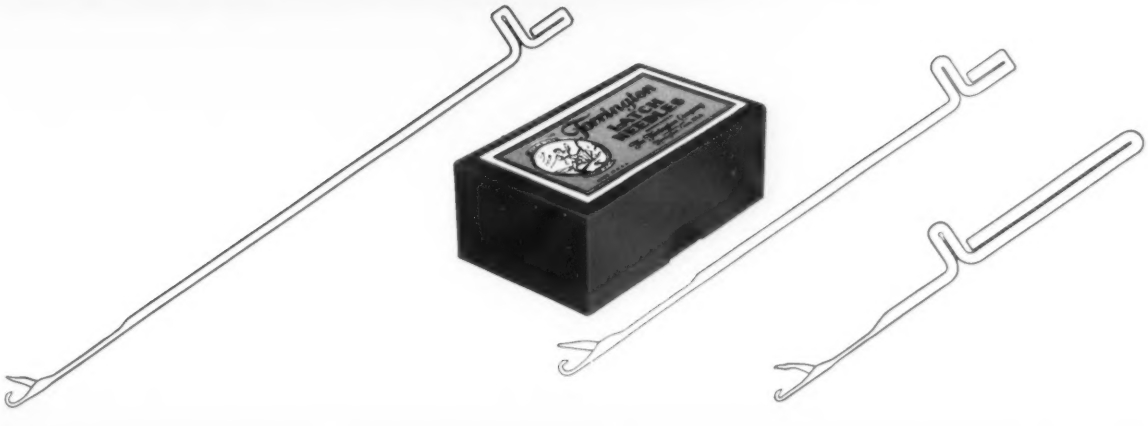
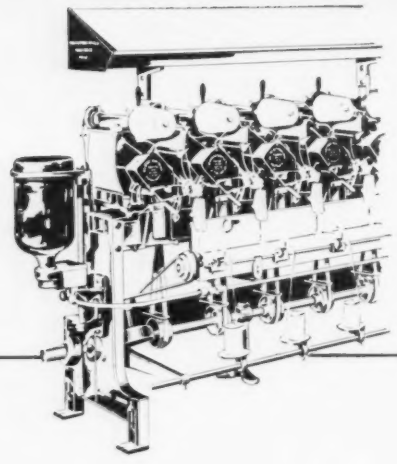
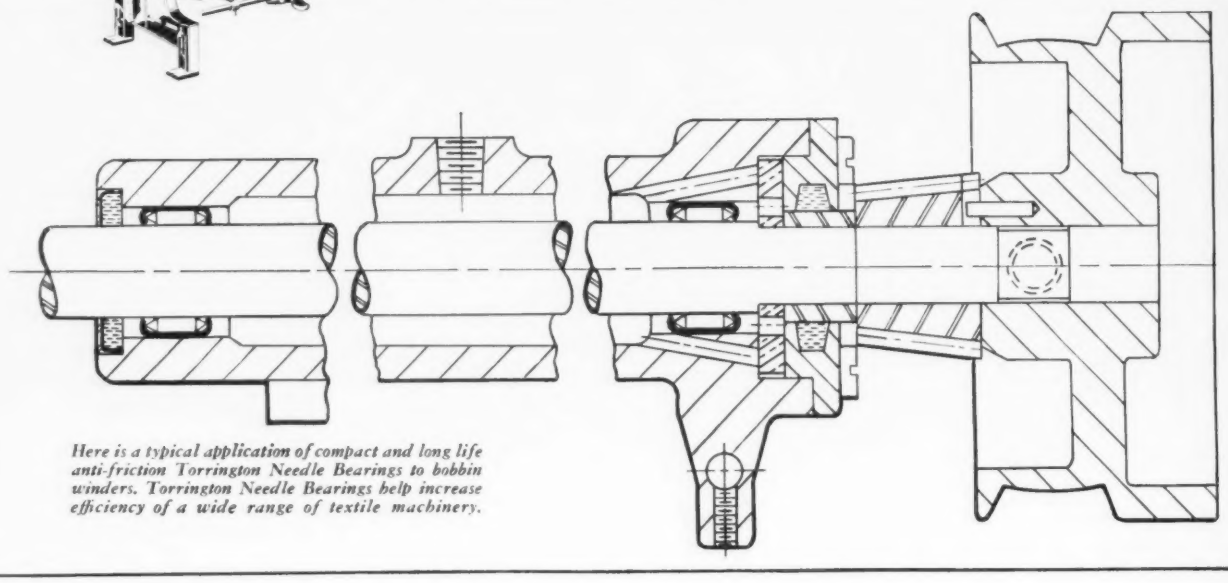
TORRINGTON *Latch Needles*





Bobbin Winders Produce Heavier, Precision-wound Packages with Torrington Needle Bearings



Here is a typical application of compact and long life anti-friction Torrington Needle Bearings to bobbin winders. Torrington Needle Bearings help increase efficiency of a wide range of textile machinery.

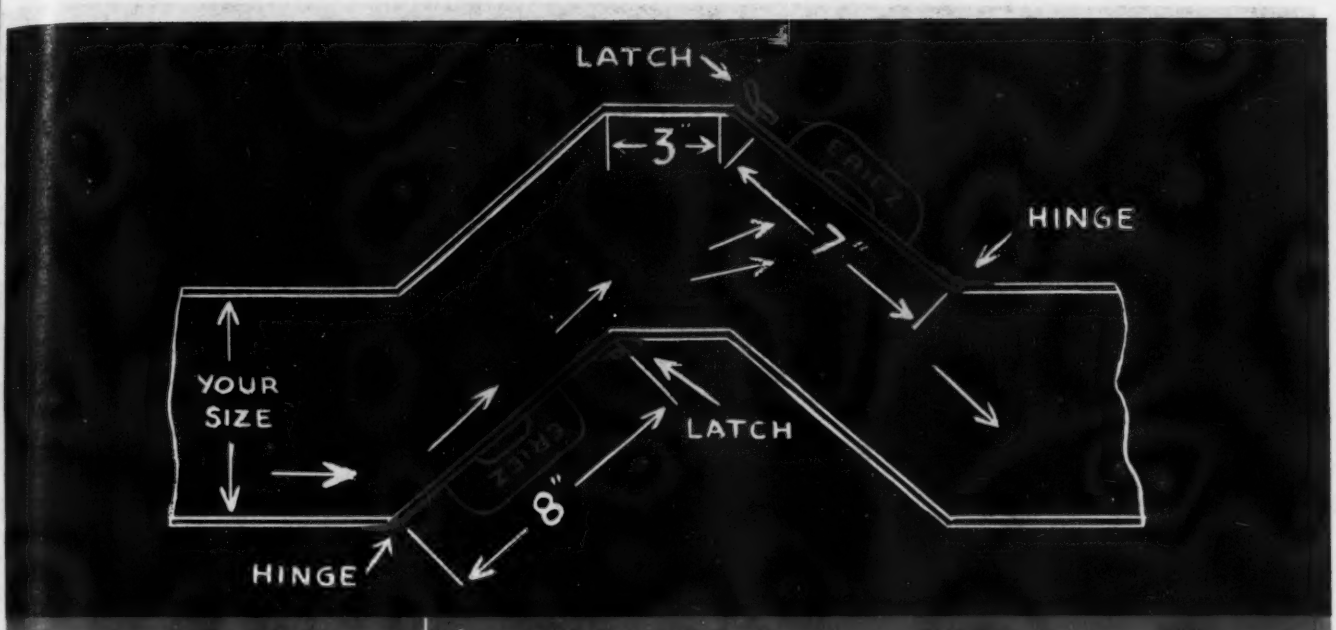
Today's increased demands . . . and development of the newer synthetics . . . are highlighting more than ever the importance of yarn packaging. Lay of the yarn on the package must be precise . . . tensions rigidly controlled . . . while at the same time packages are heavier and speeds ever increasing.

That's why you find more and more bobbin winders . . . and other textile machinery . . . turning on Torrington Needle Bearings. Easy to install, maintain and lubricate, these sturdy, *anti-friction* bearings provide smoothness and evenness of operation . . . handle heavier loads easily . . . help dampen vibrations induced by increased speeds.

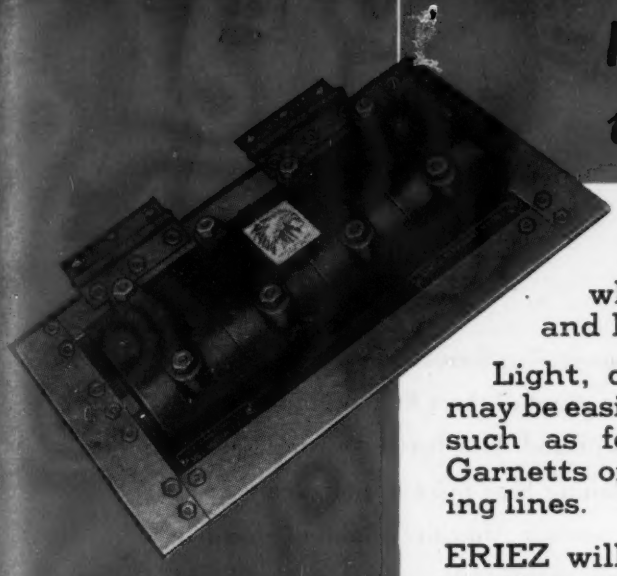
In meeting today's military needs and in facing the all-out competition of tomorrow's civilian markets, you should "back your machines up" with Torrington Needle Bearing advantages. Our new Catalog 32 explains in detail the wide range of types, sizes and applications. Why not write for it today?

THE TORRINGTON COMPANY
TORRINGTON, CONN., SOUTH BEND 21, IND.
New York Boston Philadelphia Detroit Cleveland
Seattle Chicago San Francisco Los Angeles Toronto
London, England

TORRINGTON NEEDLE BEARINGS



How To Remove Tramp Iron *from* TEXTILES IN PROCESS



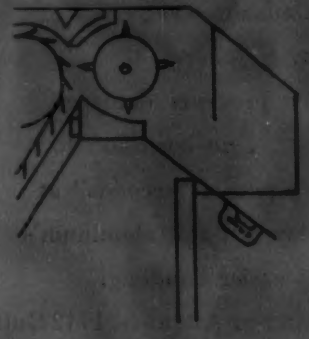
The above is a proven installation of ERIEZ Non-Electric Magnetic Separators which is preventing fires, machinery damage and loss of production time.

Light, compact and requiring no wiring, ERIEZ may be easily installed on textile processing machinery such as feeders (see sketch at left), rag pickers, Garnetts or at advantageous points in your processing lines.

ERIEZ will not spark, heat up or burn out . . Never requires attention . . . Always on the job, as no electric current is required.

Powerful and efficient—yet low in cost, ERIEZ gives you MOST PROTECTION PER DOLLAR.

ERIEZ Non-Electric Magnetic Separators are built any size to fit your needs.



Typical Installation On Feeder Hopper.

CLIP AND MAIL TODAY .....

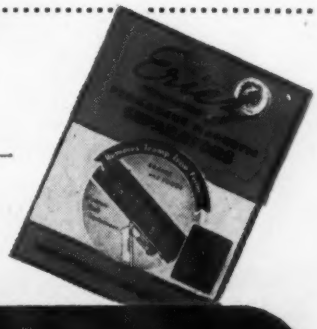
For Your Copy of Bulletin 102 A

Eriez Mfg. Co., 501 E. 12th St., Erie, Pa.

Your Name_____

Address_____

City_____ State_____

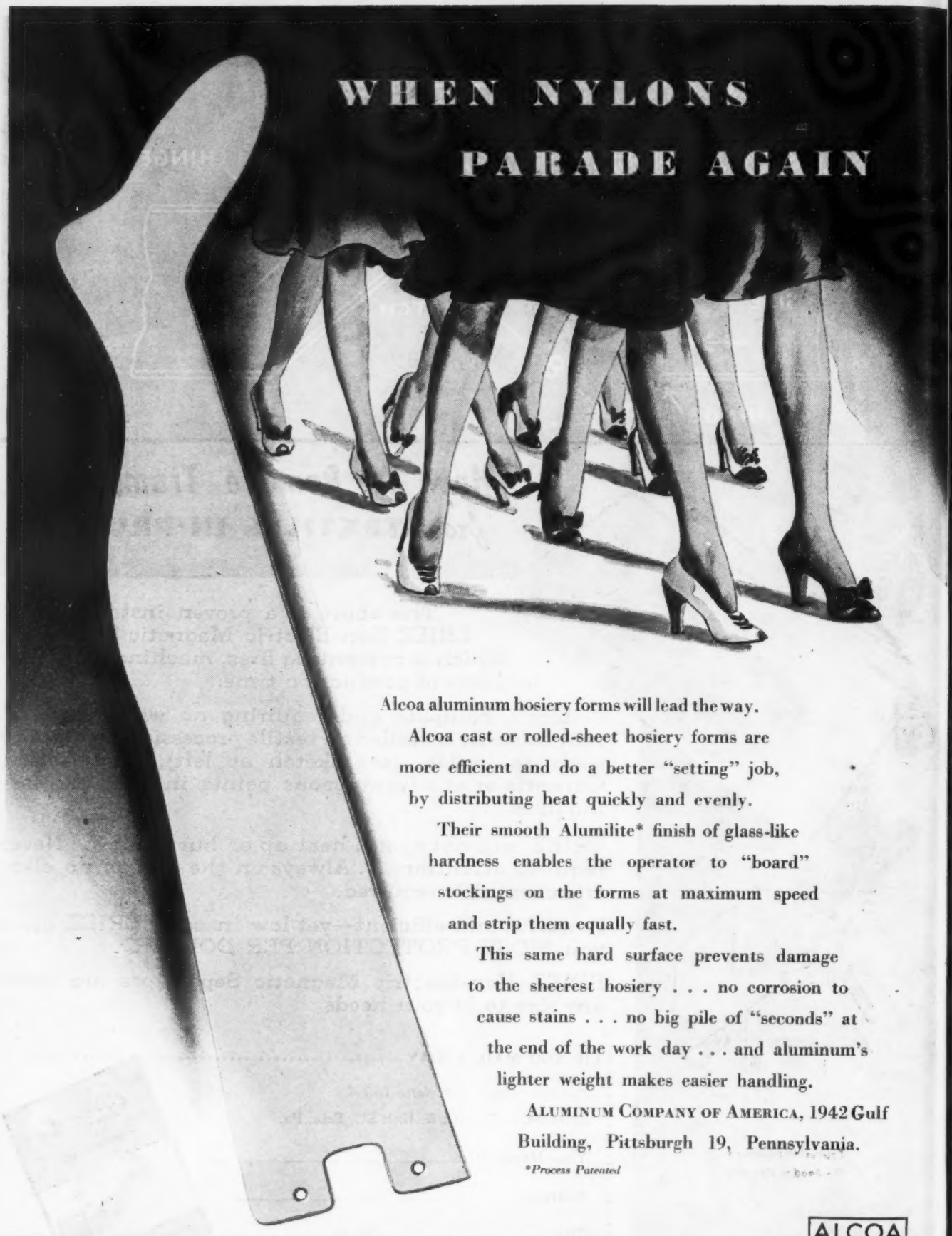


Eriez (Say EAR EEZ)

ERIEZ MANUFACTURING COMPANY

501 East 12th St. Erie, Penna.

WHEN NYLONS PARADE AGAIN



Alcoa aluminum hosiery forms will lead the way.

Alcoa cast or rolled-sheet hosiery forms are more efficient and do a better "setting" job, by distributing heat quickly and evenly.

Their smooth Alumilite* finish of glass-like hardness enables the operator to "board" stockings on the forms at maximum speed and strip them equally fast.

This same hard surface prevents damage to the sheerest hosiery . . . no corrosion to cause stains . . . no big pile of "seconds" at the end of the work day . . . and aluminum's lighter weight makes easier handling.

ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

*Process Patented

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM

DRAX-protected play clothes lead a charmed life!

Trademark Reg. U. S. Pat. Off.

Romping, playing children keep fresh-looking longer in DRAX-protected clothes! That's because DRAX-treated garments resist dirt and soil . . . shed water . . . stay crisp and *new*-looking far longer! It's a *plus* finish that means a *plus* in sales for you!

DRAX, made by the makers of Johnson's Wax, actually gives fabrics or garments invisible protection with wax! They withstand handling better . . . look fresher at the point of sale.

The advance story of DRAX is being told in announcement panels in Johnson's national advertising . . . in such publications as *The Saturday Evening Post*, *Good Housekeeping*, *American Weekly*, and many others.

Your customers are learning about Johnson's DRAX, and the added feature that DRAX is easily renewable. DRAX service is rapidly becoming available at laundries and dry cleaners.

Distinctive DRAX tags are available to identify DRAX-treated merchandise. Your customers will be specifying DRAX. Be ready for the demand. Find out about DRAX today!

S. C. JOHNSON & SON, Inc., *Fabric Finishes Division, Racine, Wis. Starrett Lehigh Building, 601 West 26th Street, New York 1. Or any of our other 18 district offices. Also S. C. Johnson & Son, Ltd., Brantford, Canada.*

***DRAX is made by the makers of* JOHNSON'S WAX** *(A name everyone knows)*

This DRAX tag will be a recognized symbol of plus value

Guaranteed by Good Housekeeping

S. C. JOHNSON & SON, Inc.
Dept. TW-85, Racine, Wisconsin

Yes, I'd like to try DRAX. Please send my FREE sample, plus instructions and complete information.

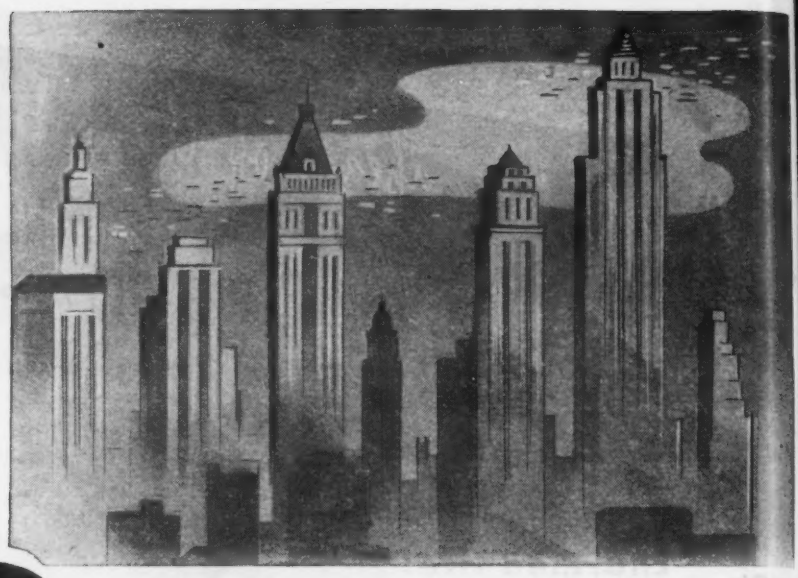
*Name*_____

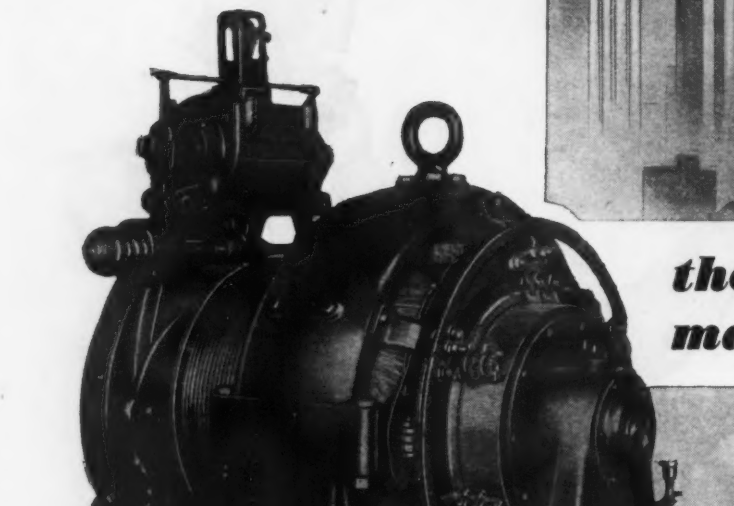
*Firm Name*_____

*Address*_____

*City*_____ *State*_____

Buy another War Bond!





the machine that helped make skylines . . .

now serves small buildings, too

The gearless elevator machine, first designed by Otis Elevator Company, was the result of a demand for faster and more efficient vertical transportation in tall buildings.

During the past 43 years, the smooth, quiet performance, and the economical operation of this machine have earned it universal recognition and acceptance. For these reasons, many Architects and Engineers today specify Otis Gearless Elevators *for smaller buildings* — whenever performance of outstanding quality is required.

Stores, Hospitals, Hotels, and many other buildings—whether of a few stories or many — can now benefit by the life-long operating smoothness and efficiency of Otis Gearless Elevators.

Otis representatives are ready now to cooperate with Architects and building owners . . . to recommend the equipment best suited to individual needs. For the finest in vertical transportation tomorrow, call your Otis representative TODAY.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

LONGER LIFE
LOWER COST

when they move on Bassick Casters

You'll save time in handling and give your materials and equipment the kinder treatment that protects against damage and wear and lengthens life.

The caster shown is Bassick's Series "38" — one of a series of steel stationary casters that have shock-absorbing resiliency and extra strength to withstand severe usage. Yet — rugged as it is — it's light and economical.

Note particularly the heavy-gauge steel horns, scientifically shaped to prevent bending or buckling. All Bassick steel casters are furnished standard with seamless steel spanner bushings for extra strength.

Thread guards which prevent clogging of wheels by fibres, lint or thread are important. Be sure to specify thread guards on all casters you buy.

Bassick offers the world's most complete line of casters and a degree of quality in materials and construction that is unsurpassed. Let Bassick Casters keep your materials *rolling*.

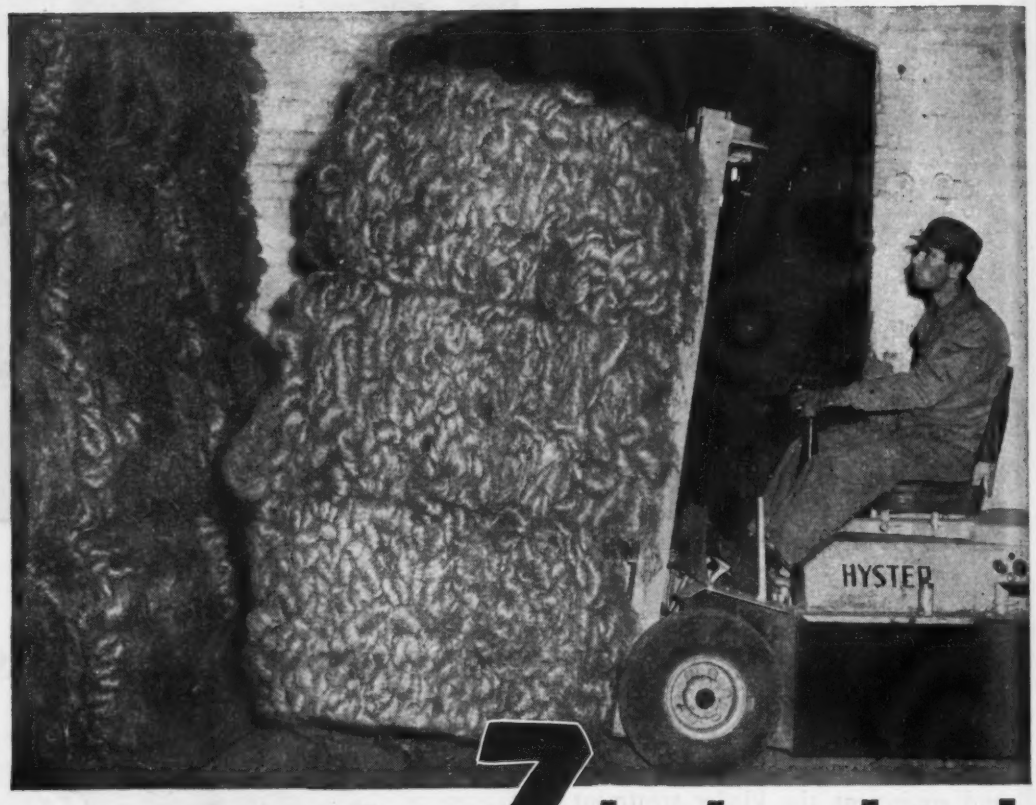
THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corporation. *Canadian Division*: Stewart-Warner-Alemite Corporation, Ltd., Belleville, Ont.

Making more kinds of Casters... Making Casters do more

Bassick

HYSTERS do the job right - -

HYSTER
FOR ANY LIFT OR PULL



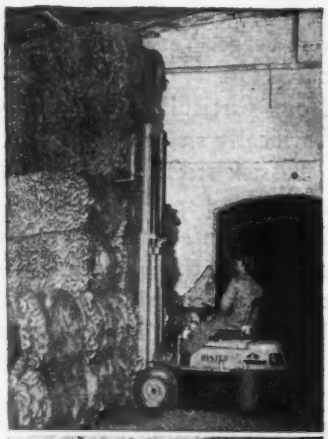
3 bales per trip 7 bales high

That's how HYSTER 20 Fork Trucks move and stack heavy, baled hemp at the Galva Warehouse Company, Galva, Illinois. It wasn't always done that easily.

20 to 25 men were formerly used to man-handle these 600-800 pound bales. Then HYSTERS took over—two trucks, two drivers and two helpers—doing the entire job from car unloading and transporting to high stacking; doing it faster, easier, more efficiently.

This used to be slow, difficult, laborious work. And working room, needed by the men in their stacking operations, became lost space. HYSTERS not only utilize all space by stacking bales "snug"—they also stack one bale higher than before. The all-around savings are apparent.

HYSTER 20's can lift, transport and tier *any materials* in unit loads up to one ton. Streamlined, with trunnion steer wheel and pneumatic tires, they operate in narrow quarters, up and down ramps, over any surface. Anyone can operate them. For all the facts about these HYSTERS that "deliver the goods" with savings, write us.



845-72

HYSTER COMPANY

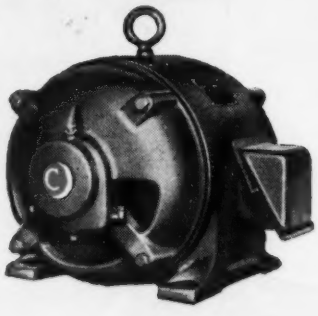
2922 N. E. Clackamas Street
PORTLAND 8, OREGON

1822 North Adams Street
PEORIA 1, ILLINOIS

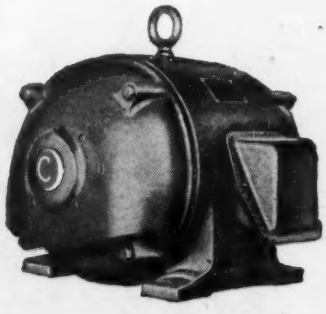
BRANCH OFFICES: 221 N. LaSalle Street, Chicago 1, Ill.; 90 West Street, New York 6, N. Y.; 1022 Denrike Building, Washington 5, D. C.; 233 Ninth Street, San Francisco 3, Calif.; Masonic Building, New Orleans 12, La.; 2219 Fourth Avenue, Seattle 1, Wash.; 2700 Santa Fe Avenue, Los Angeles 11, Calif.; 215 Euclid Avenue, Cleveland 14, Ohio.; 211 Farnsworth Building, Memphis 3, Tenn.

TEFC—Protects Against Destructive Dust, Grit, Powdered Materials

3 OTHER TYPES OF PROTECTION



Form J
General Purpose Application



Splash Proof Protection

Century Explosion Proof Motor

FOR PROTECTION Against Atmospheres That Contain Acid and Alkali Fumes – Abrasive Dusts

Use Century TEFC Motors

Century Totally Enclosed Fan Cooled motors are designed to operate continuously in abnormal atmospheres found in chemical and processing plants.

They provide protection against atmospheres containing acid and alkali fumes, oil or animal fats, coolant solutions, metallic, abrasive, and other destructive dusts, grit, and powders.

Where atmospheres are charged with high concentrations of destructive fumes, Century TEFC motors can be provided with special insulations.

Why not find out how Century TEFC motors can help you avoid production delays and help achieve continuous, economical performance? Call in a Century engineer.

Century C MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

383

"We plan to use more Stainless Steel just as soon as we can get it."

Of 88 textile plants and equipment manufacturers recently interviewed, 70% already use Stainless Steel. 39.7% plan to increase the postwar application of this superior metal.

DURING these war years of stepped-up production, U·S·S Stainless Steel has generously repaid the foresight of those who had insisted in using it despite its sometimes higher cost.

In hard-working equipment pushed far beyond its contemplated capacity, U·S·S Stainless Steel, in striking contrast to other less effective materials, has stood up in a manner that has convinced the most cost-conscious skeptics that it *more* than pays its way.

As they have watched Stainless Steel out-perform one material after another—have seen it last four, five, and even sixteen times as long with no signs of deterioration—they have been forced to admit that Stainless Steel is by far *the cheapest material to use.*

It is on this basis of its proved economic superiority that U·S·S Stainless Steel deserves preference in your equipment of tomorrow.

The practical money-saving advantages that Stainless offers, you will find at their *best* in U·S·S Stainless Steel. This perfected, time-tested steel is produced on *special* equipment by skilled and experienced men who make Stainless Steel only and whose entire attention is devoted to constantly perfecting its characteristics and improving its performance.

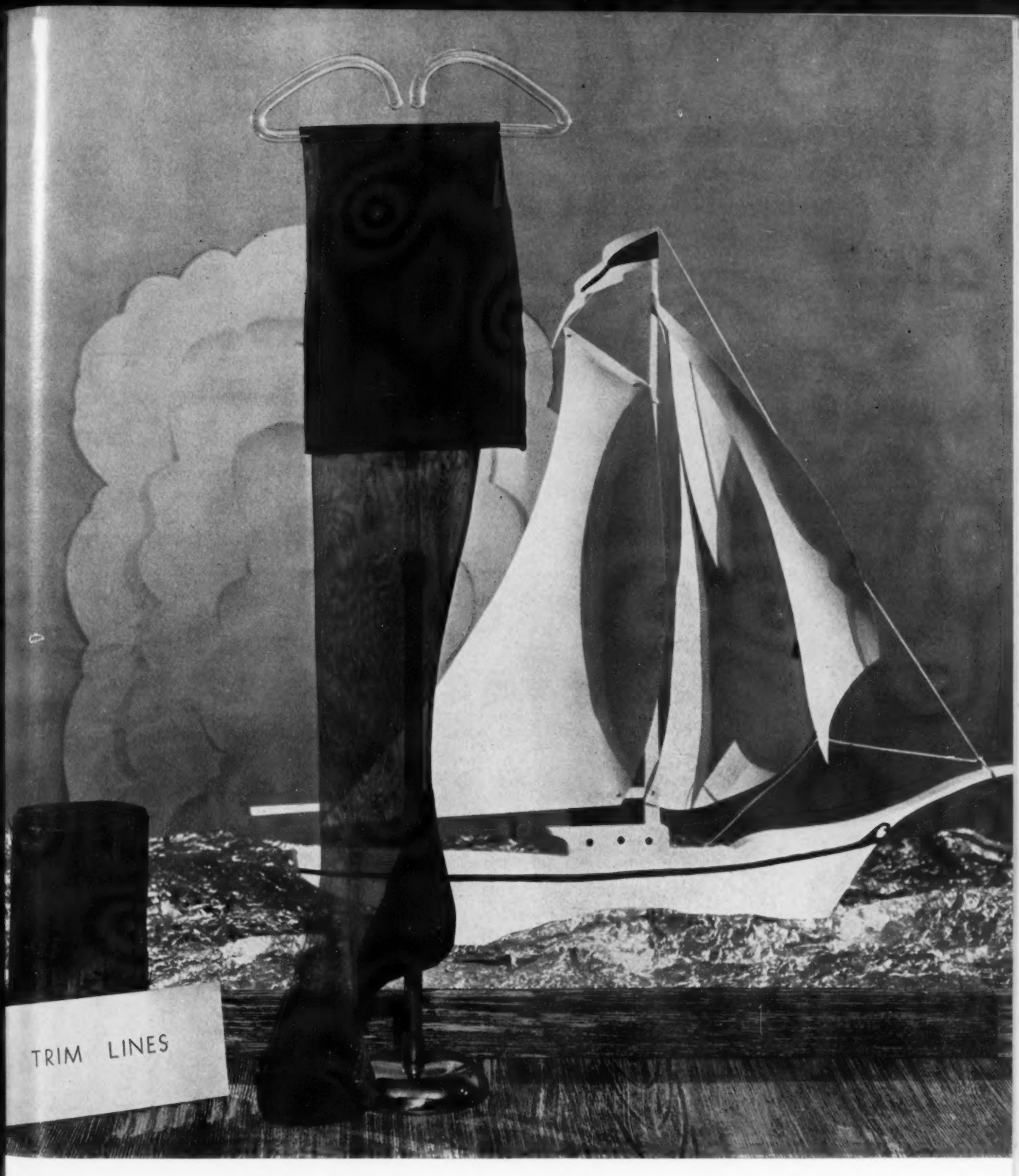
✱Our free booklet "U·S·S Stainless and Heat Resisting Steels in Modern Industry" is packed with technical information and practical suggestions that you will find extremely helpful. Send for your copy.

U·S·S STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
United States Steel Supply Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

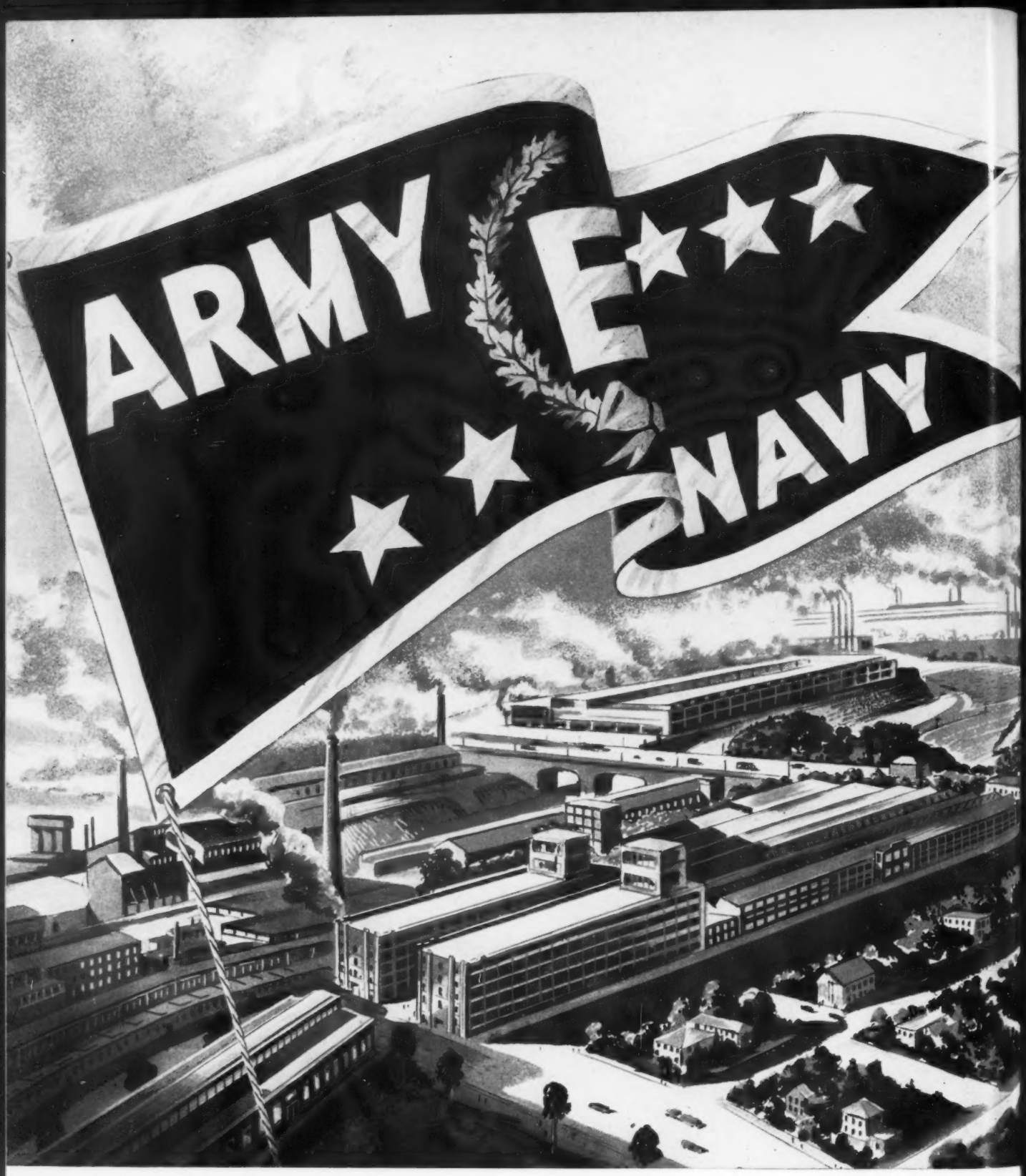
USS STAINLESS STEEL UNITED STATES STEEL

UNITED STATES STEEL



Trim Lines . . . It takes clear, even-textured stockings to highlight trim, well-tailored styles. Every full-fashioned stocking manufacturer knows that quality production depends on flawless needles. Keep your Knitting Machines young and effective with TMW Needles. *. . . And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.



THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

Five Star Army-Navy "E"
July 9, 1945

And now ★ ★ ★ ★ ★

This sixth citation for Production Awards reads in part as follows:

"This award, signified by the five stars to be displayed on your 'E' flag, is an indication that all of you have maintained the excellent record of production which merited your previous awards. Each and every one of you may well be proud of this high honor and inspiring record."

This is the highest award yet given—and as the new Five-Star Pennant floats over our Plant, we men and women of Textile proudly renew our pledge: To work unceasingly until Victory is won.

TEXTILE MACHINE WORKS • READING, PA.

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS

TRUCK-ENGINEERED **Stamina!**

170,000 Mountain Miles in 2 Years Prove Ford Stamina for R. B. Olney

MANY A MILL in the Carolinas using Olney's Textile Mill Paints knows that faithful delivery service is part of the product . . . and that good Ford Trucks furnish the reliable hauling. "The Southerner," as the Olney truck pictured is attractively lettered, had gone 97,000 miles before the heads were taken off its V-8 engine for the first time. New rings were installed.

"The cylinder walls were too nearly perfect to touch them at that time," writes Mr. Olney. *"This truck now has over 170,000 miles on it,"* he continues, *"and it is still going strong. While we are now having to make certain minor replacements, we have had no trouble whatsoever with clutch, transmission, rear end, etc. This truck always carries a 5-ton payload over a mountainous route, making two or three round trips weekly between Chattanooga and Spartansburg. We think the record of this unit is quite remarkable."*

Mr. Olney sums it up, *"We're proud of the job this truck is doing."* And hundreds of thousands of other truck operators are equally proud of the brilliant service records their good Ford Trucks have made through these trying years. They *know* that Ford sturdiness and reliability, backed by the loyal service of Ford Dealers, have measured up to the toughest truck ordeal in history.

New Ford Trucks are available now, for essential civilian service. See your Ford Truck Dealer without delay.

Ford

FORD ADVANCED TRUCK ENGINEERING

More Economy • More Endurance
Easier Servicing

A STILL GREATER 100 HP V-8 ENGINE with NEW Ford steel-cored Silvaloy rod bearings, more enduring than ever in severe service • NEW aluminum alloy cam-ground pistons with 4 rings each, for oil economy • BIGGER, more efficient oil pump and IMPROVED rear bearing oil seal • NEW rust-proofed valve springs • NEW efficiency in cooling • in carburetion • in lubrication • Far-reaching ADVANCEMENTS in ease and economy of servicing operations.

IMPORTANT FORD CHASSIS ADVANTAGES: Easy accessibility for low-cost maintenance • Universal service facilities • Heavy-duty front axle • Extra-sturdy full-floating rear axle with pinion straddle-mounted on 3 large roller bearings • 3 axle ratios available • 2-speed axle available at extra cost • Powerful hydraulic brakes, exceptionally large cast drums • Long-lived needle bearing universal joints • Rugged 4-speed transmission with NEW internal reverse lock.

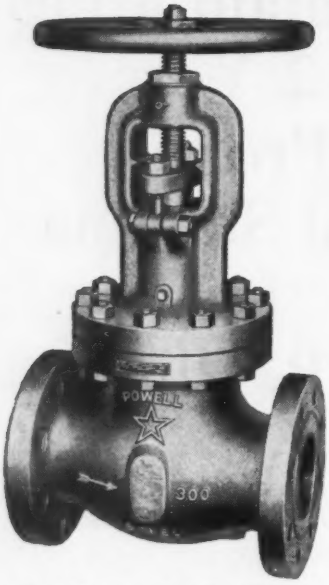
FORD TRUCKS

AND COMMERCIAL CARS

TRUCK-ENGINEERED • TRUCK-BUILT • BY TRUCK MEN

PURE NICKEL
MONEL METAL*
INCONEL*
VALVES

The Solution to many a flow control problem



Class 300-pound Cast Steel Gate Valve with Monel Metal trim.

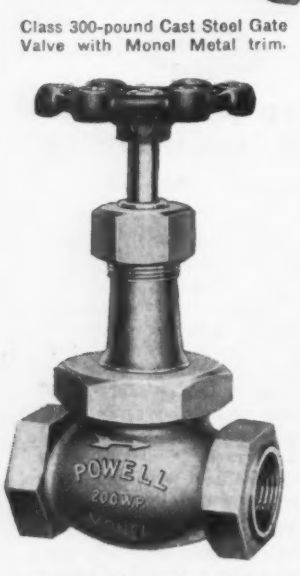
All-Pure-Nickel, all-Monel-Metal and all-Inconel Valves as well as valves with Monel Metal trim (internal working parts) are another outstanding Powell contribution to help solve Industry's flow control problems. In all services where corrosion and excessive heat or cold are encountered; where absolute purity of the end product must be maintained; and for the handling of steam, water, acid, alkalies and many other media these valves are superior to all others. This has been conclusively proved by performance records in leading plants throughout the nation.

For twenty years, Powell Engineers and the Powell Special Alloy Valve Division have designed and fabricated valves in a wide variety of pure metals and special alloys to meet every flow control requirement of Modern Power, Chemical, Food Processing and Textile Plants, Oil Refineries, etc. This specialization is your assurance of satisfaction. Write NOW for details and your copy of our new booklet "Powell Valves for Corrosion Resistance."

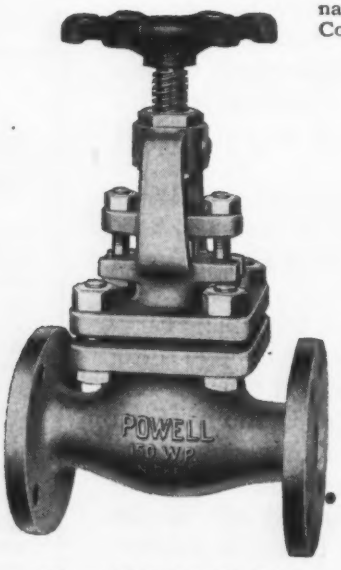
The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCK IN PRINCIPAL CITIES

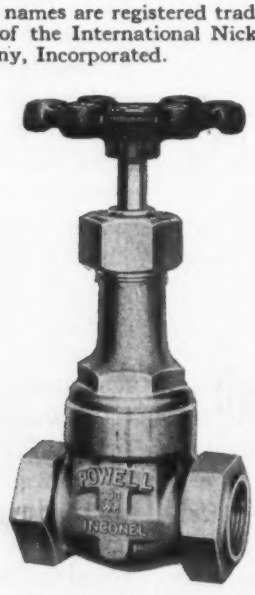
*These names are registered trade-names of the International Nickel Company, Incorporated.



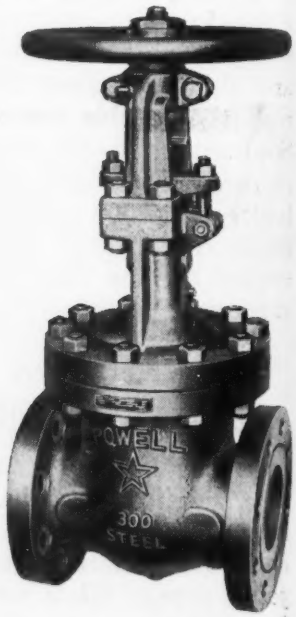
200-pound Globe Valve. Available in All Pure Nickel, All Monel Metal or All Inconel.



150-pound O. S. & Y. Gate Valve. Available in All Pure Nickel, All Monel Metal or All Inconel.



200-pound Gate Valve. Available in All Pure Nickel, All Monel Metal or All Inconel.



Class 300-pound Cast Steel Globe Valve with Monel Metal trim.

POWELL VALVES

FOR MILLS, PLANTS AND OFFICES

more light.. beauty.. comfort.. economy

with

PC GLASS BLOCKS

IN ALL SORTS OF PLANTS, PC Glass Block construction lends a new note of beauty and distinction. Floods of diffused daylight are directed over wide areas. Infiltration of harmful dust and dirt is prevented. Temperature and humidity are more easily kept at desired levels, with less surface condensation. Unusual freedom from repairs and maintenance, quick easy cleaning mean important cost savings.

THE growing demand for PC Glass Blocks is due mainly to their ability to do so many things so well.

They direct diffused daylight over wider areas. They add a distinctive note of beauty to both modern and traditional designs. They preserve privacy. They help to maintain desired temperature and humidity, to lessen condensation. They are free from repairs and maintenance. They reduce cleaning costs.

Now is the time to make sure that you are fully informed on *all* the advantages you get when you install PC Glass Blocks. Write today for complete technical and descriptive data, which includes the full line of shapes, sizes and patterns in PC Glass Blocks. Pittsburgh Corning Corporation, Room 756, 632 Duquesne Way, Pittsburgh 22, Penna.

· Also makers of PC Foamglas ·

PC GLASS BLOCKS successfully withstand warm, humid atmospheres, where ordinary sash materials frequently rot, warp, check, rust and need constant repainting. Large panels are easily cleaned.

PITTSBURGH PC CORNING

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY, PITTSBURGH 22, PA

SMART MODERN OFFICES are truly private when PC Glass Blocks are used for walls and partitions. Distracting sights and sounds are excluded, plenty of diffused daylight is available where it is most needed.

Pleased with results in one plant, trouser firm paints 3 others with . . .

THE HERCULES TROUSER COMPANY
TROUSERS EXCLUSIVELY
P. O. BOX 568 • COLUMBUS 16, OHIO

April 19th, 1945.

Glidden Co.
131 E. Long St.,
Columbus 15, Ohio.

Attention: John L. Watt

Gentlemen:

In March 1944 we painted the sewing room at our Columbus plant with Spray-Day-Lite. This was our first application of this type of painting used in any of our plants.

We were so well pleased with the results that since that time we have used Spray-Day-Lite in other departments of our Columbus plant and for all departments in our plants at three other Ohio cities.

We do not hesitate to recommend Spray-Day-Lite for use in factories of our type.

Yours very truly,

THE HERCULES TROUSER COMPANY.

PJV:rap

GLIDDEN

SPRAY-DAY-LITE

Again...superb Glidden maintenance paint sells itself through outstanding performance

The story of its first use—and continued use—of Glidden SPRAY-DAY-LITE told by The Hercules Trouser Company is not at all unusual. For throughout the textile world, this leading oil enamel maintenance paint is making *permanent* friends by living up to such performance standards as these . . .

1. **SPRAY-DAY-LITE increases lighting efficiency by giving *maximum* light reflection and diffusion.**
2. **One coat equals conventional two-coat results.**
3. **Provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.**
4. **Its intense white does not yellow with age—also available in 10 beautiful colors.**
5. **Durable, egg-shell finish eliminates eye-straining glare—washes like tile.**
6. **Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.**

Write today for SPRAY-DAY-LITE Color Chart visualizing wide range of attractive color combinations. Or, we will send a Glidden engineer to give you an actual demonstration of SPRAY-DAY-LITE in your own plant. No obligation!

THE GLIDDEN COMPANY • Cleveland 2, Ohio

TIME-TESTED

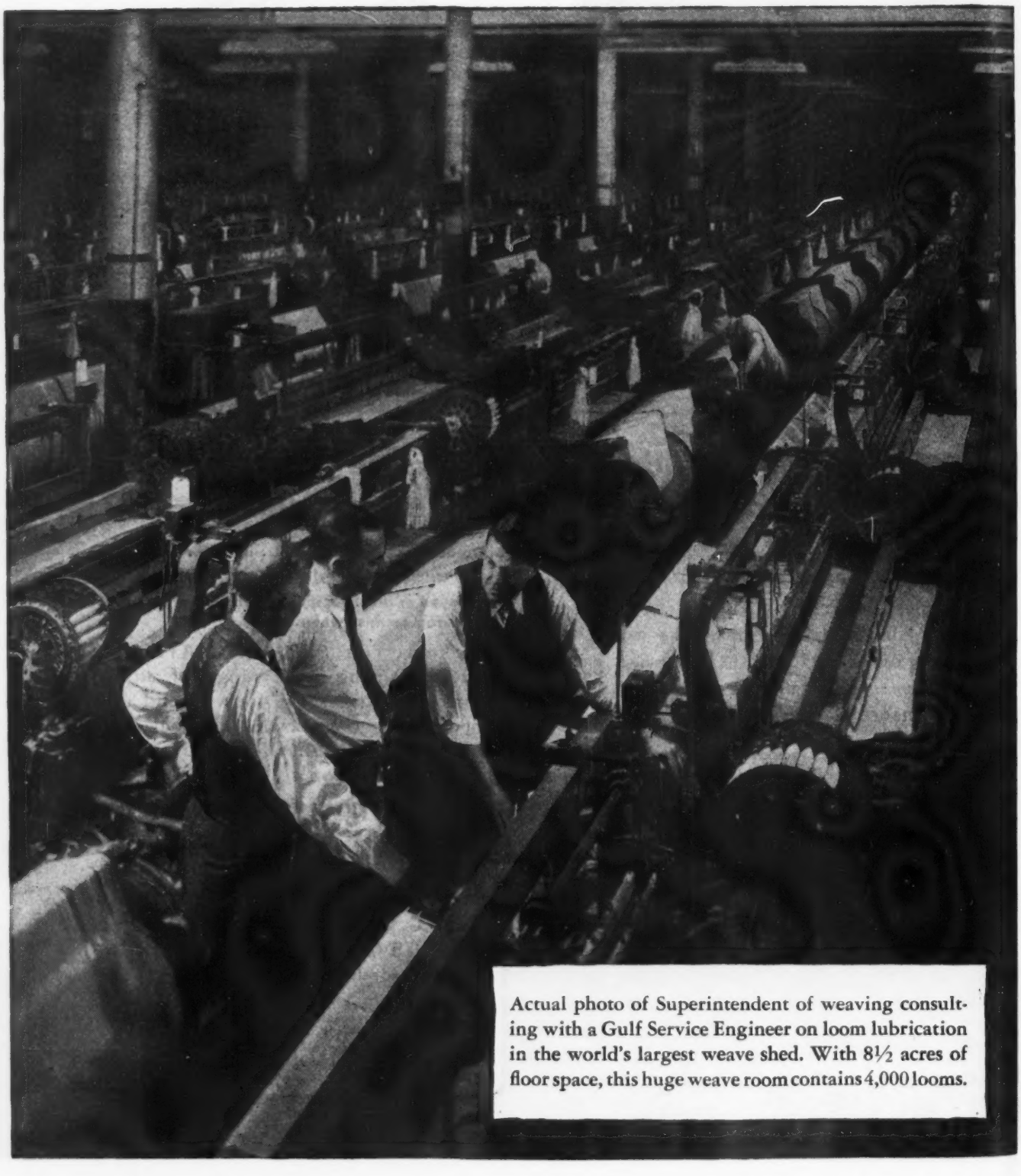
Pacemaker in Paints

E-Z-C COLOR ENGINEERING PUTS COLOR TO WORK

The scientific selection of color for machines, equipment, work-rooms and offices can help ease eyestrain, lessen fatigue, reduce accidents and boost production. E-Z-C Color-Planned Interiors are the result of many years of intensive research in the science of color. Send for free booklet, "Sight Perfection," that shows how to use color strategically in industry.

GULF QUALITY LUBRICANTS AND

help reduce seconds in



Actual photo of Superintendent of weaving consulting with a Gulf Service Engineer on loom lubrication in the world's largest weave shed. With 8½ acres of floor space, this huge weave room contains 4,000 looms.

GULF ENGINEERING SERVICE

world's largest weave shed on one floor... covering 8½ acres!

"Thanks to proper lubrication, we have practically eliminated oil spots—and we keep maintenance costs low"—

"BEFORE WE CALLED IN A GULF SERVICE ENGINEER and adopted the lubrication practice he recommended, we had a high percentage of seconds due to oil spots," says this Superintendent. "Now oil spotting is practically eliminated, and we get the kind of lubrication that insures low maintenance costs."

Modern high-speed looms require the proper application of lubricants that provide maximum protection against excessive wear, and which resist oxidation, gumming, and "throw" to the highest degree. That's why this great mill, and many others, specify Gulf oils and greases in the weave shed — experience has proved that these quality lubricants help insure continuous production, and reduce spotting, down time, and maintenance costs.

Remember this big plus value you get when you use Gulf lubricants: The helpful counsel of Gulf Service Engineers, specialists in scientific textile mill lubrication. Make sure your equipment is getting the kind of lubrication that helps you get maximum production and minimum maintenance and power costs. Write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Service Engineer to call.

GULF OIL CORPORATION · GULF REFINING COMPANY

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

GULF INDUSTRIAL LUBRICATION

THE BEE-LINE WAY...

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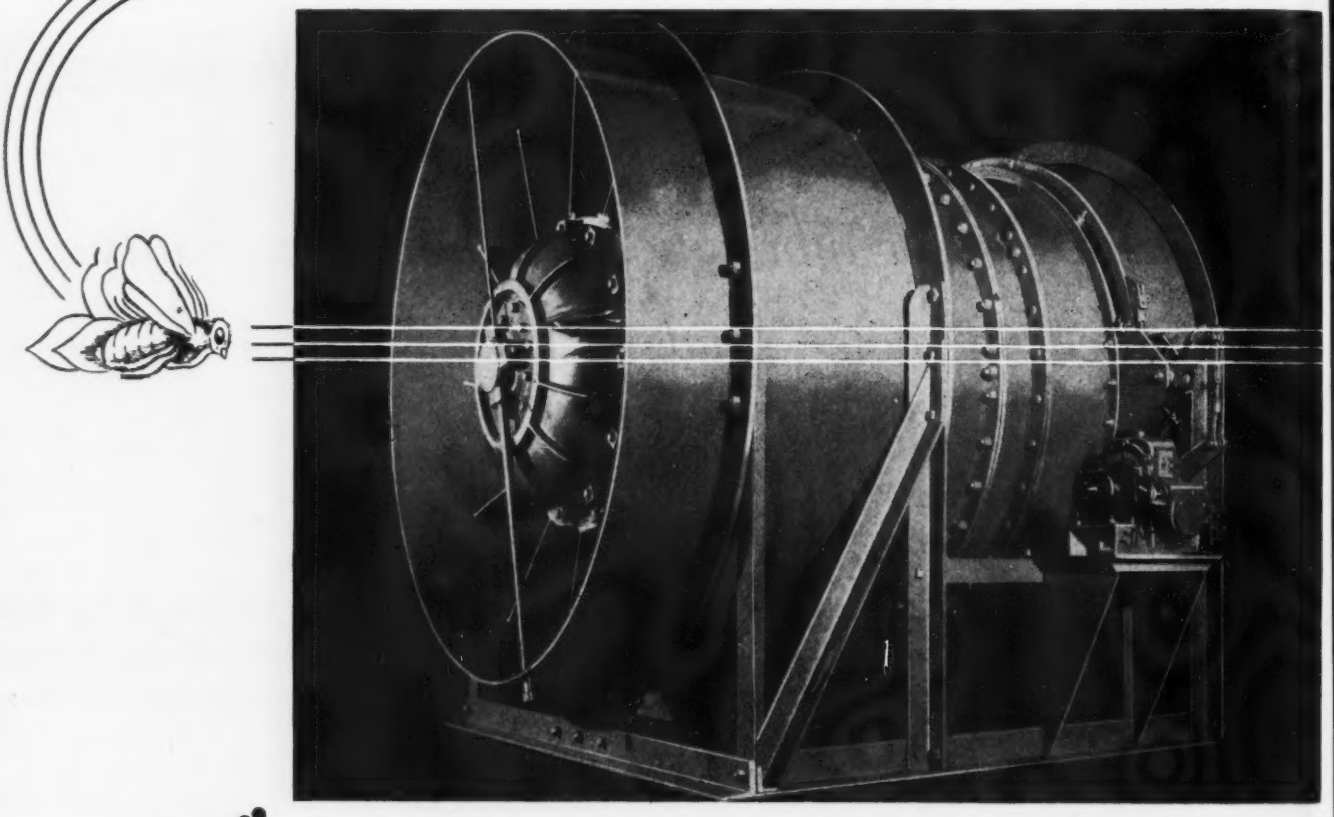

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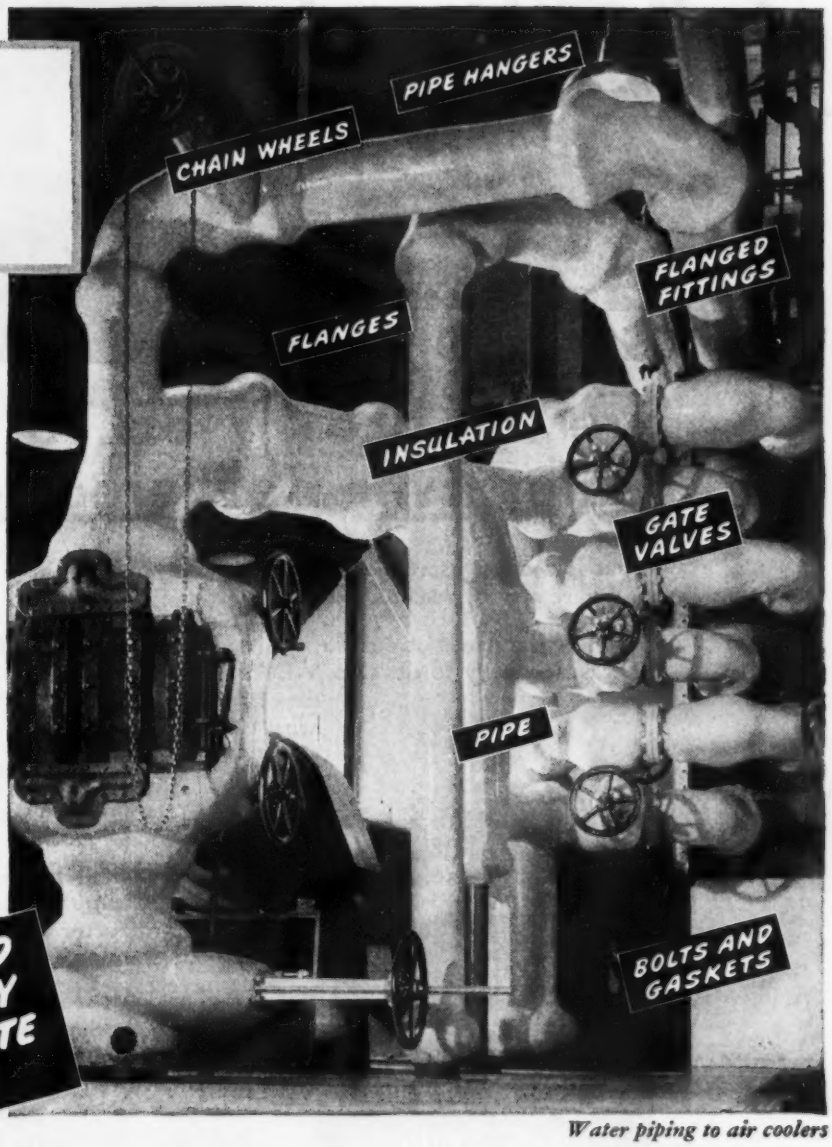

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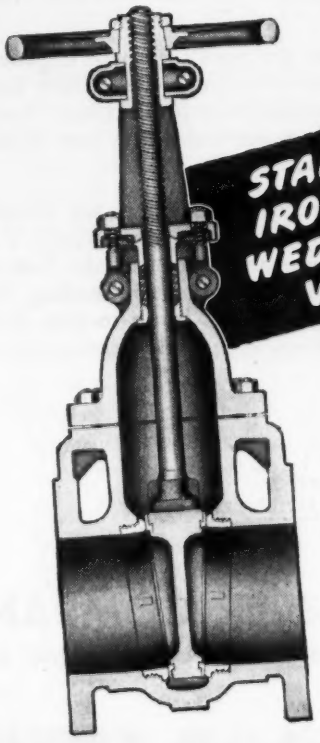

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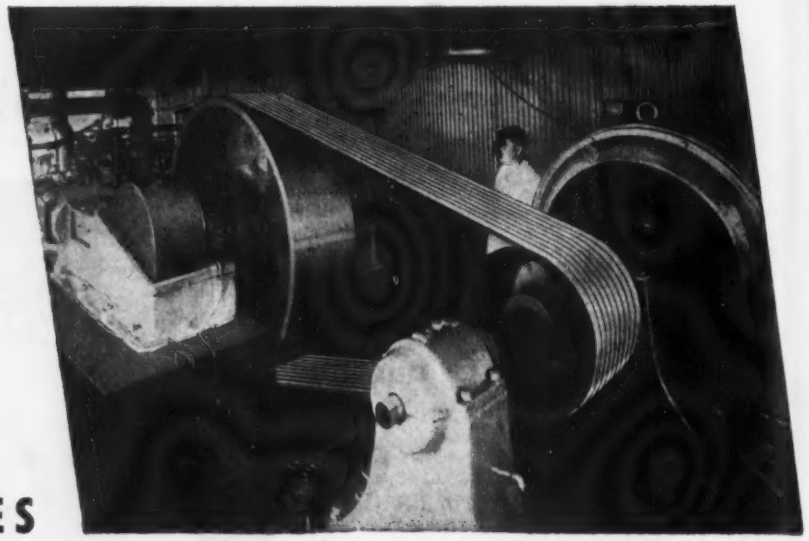

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FREIGHT RATES *and* INDUSTRY LOCATION

A SIGNIFICANT decision, announced by the Interstate Commerce Commission last May, will take preliminary effect on the 30th of August. It will eliminate some of the advantage in freight rates which Eastern shippers have enjoyed over shippers of the South and West.

The decision has been enthusiastically hailed as an Emancipation Proclamation for industrial development in the South and West. It has also been roundly condemned as a meddlesome control measure that ignores valid differences in haulage costs, and recklessly blots out one of the important factors in determining the location of American industry.

Cooler appraisals indicate that the net effect of the rate changes will be far less drastic than predicted by the more passionate advocates or adversaries. Nonetheless, it is important for the business world to be informed both upon the principle at issue, and upon the forseeable consequences of the ICC ruling.

What The Decision Calls For

The Commission's order, unless modified, or successfully contested in the courts, will require: (1) the eventual establishment of a single freight classification, or grouping of commodities for rate-making purposes, for application throughout the United States; (2) a single level of "*class rates*"—or rates established for groups of commodities and primarily applying to manufactured and semi-manufactured articles of high value—in the area east of the Rocky Mountains. This level is to be about 15 per cent higher than the present Eastern scale.

Because it will take some time, probably several years, to work out a uniform classification in place of the three major classifications now existing, a preliminary adjustment is provided.

Under this adjustment the existing classifications will remain in effect, but the rates on articles moving on *class rates* will be increased 10 per cent in Eastern or Official Territory—the area east of Lake Michigan and the Mississippi River and north of the Ohio River. On the other hand, the rates will be reduced 10 per cent on articles moving on class rates in the South and West, and on those moving interterritorially.

What The Problem Was

At the present time there are marked differences in the levels of the basic scales of class rates in the five major rate territories—Eastern or Official, Southern, Western Trunk-Line, Southwestern, and Mountain-Pacific. It is difficult to average the levels of rates, but if the level of the class-rate scale in Official Territory is taken as 100, the levels in the other territories may be roughly considered as follows: Southern, 139; Western Trunk-Line, 128, 146, 161, 184 in Zones I, II, III, and IV, respectively; Southwestern, 161; Mountain-Pacific, 166.

These are over-all comparisons. On many individual articles the differences in levels of rates are greater or less than indicated because of offsetting differences in regional classification schemes. In many cases, the use of exceptions to the classifications and of special commodity rates has reduced the regional disparity in rates. In fact, on some articles, particularly on certain low-grade traffic such as logs, pulpwood, bricks, coal, sand and gravel, the South and the West have actually had lower rates than Official Territory. The rate disadvantage of the South and West has been principally on manufactured articles.

The territorial differences in class-rate levels have complicated the problem of constructing rates from a point in one territory to a point in another. Today, such a rate tends to represent a blend of the levels in effect at the place of shipment and at the destination. Thus manufacturers and dealers in a higher-rated territory are likely to see themselves at a disadvantage when they attempt to sell goods in a lower-rated territory against competition located there.

Now, if differences between territorial rate levels are removed, the *inter*territorial freight-rate problem largely disappears. So it is an important question whether such differences are justified. The Commission has found that they are *not* justified either by differences in transportation costs or by

other valid considerations. From that finding came the order to establish a uniform level of class rates and a single freight classification.

The Decision And The Map Of Industry

What effect will this decision have on the location of industry in the United States; and what effect will it have on the economic development of the East, the South, and the West?

Today, many in the West and South believe that their higher class rates have seriously retarded the industrial development of these areas, and promoted the concentration of manufacturing in Official Territory. They point out that Official Territory has over 50 per cent of the population of the country, had nearly 70 per cent of the persons employed in manufacturing in 1940, and accounted for nearly 73 per cent of the "value added by manufacture" in 1939. Boasts of industrial development in the South, and to some extent in the West, in recent years are accompanied by claims that this would have been greater but for the freight rate structure.

Another point gets into the argument. Official Territory is not only the country's most highly industrialized section, but also its greatest consuming territory. It is the market which nearly all manufacturers desire to reach, particularly when they have a surplus to sell. Here again is occasion for an outcry by producers outside of Official Territory against the consequences of their high rate levels and the levels of interterritorial rates. Under the circumstances it is not strange that the South and West have argued long and volubly for mile-for-mile equality in rates.

Those in Official Territory deny that the South and West have been handicapped by the rate adjustment, but at the same time look with apprehension at the loss of their rate advantage.

What's The Effect?

However, now that the ICC's ruling is about to be put in operation, it is time for the colorful statements of the debating period to give way to a sober appraisal of what the consequences are likely to be.

In the first place, it should be noted that the preliminary adjustment will affect only a small fraction of the traffic. Estimates indicate that only about 4 per cent of the full-carload traffic moves on regular class rates. About 11 per cent moves on exception ratings which are not affected by the preliminary order; and about 85 per cent moves on commodity rates, which were not within the scope of the Commission's decision. The proportion of less-than-carload lot traffic affected is much greater, since a large part of it moves on class rates; however, less-than-carload traffic constitutes less than 1½ per cent of the total tons carried.

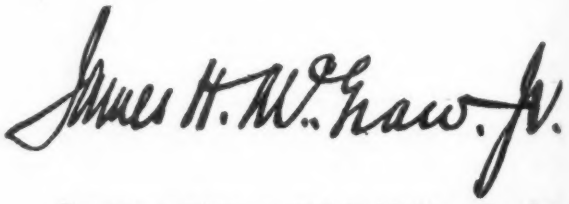
The permanent rate structure will probably affect more traffic than the preliminary order since, in the establishment of a uniform classification containing more classes than at present provided, many articles now moving on exception ratings are likely to be brought within the scope of the classification, and the same may be true of some articles moving on commodity rates.

But, even if a large proportion of the traffic were affected by the Commission's order, or if the principle of equality in rate levels is eventually extended to much of the traffic moving on commodity rates, these freight-rate adjustments cannot be expected to revolutionize the pattern of industrial location in the United States.

It seems evident that most industries now found in Official Territory are located there for other advantages than that of a lower level of freight rates, undeniable as such an advantage is. Insofar as that is the case, they have little to fear from equalization of the rate levels. For those which have, indeed, been dependent upon preferential rates and otherwise badly located, the removal of the preference and their consequent shift to some area possessing a real locational advantage would be desirable from the point of view of the national economy.

While the high degree of industrial concentration in Official Territory does not rest on such a flimsy basis as a lower level of class rates, the Commission's decision does remove one existing handicap to the growth and development of the South and West. The new adjustment should permit all sections of the country to develop the industries for which they have natural advantages. It should contribute to a sounder regional specialization than we have heretofore had.

This decision will neither destroy the economy of the industrial East, nor will it, overnight, assure the industrial flowering of the South and West. It constitutes one sound step toward establishing that equality of opportunity for all sections of the country which is essential to a nation that bears the proud title of The *United* States.



President, McGraw-Hill Publishing Co., Inc.

August, 1945 TEXTILE WORLD Vol. 95, No. 8

100 Years of Chain Control for LOOM BOX MOTIONS

HIGHLIGHTS: *Indicator chain, applied to box motion on power loom in 1845, gave unlimited versatility—Only cam and tappet devices preceded mechanisms for "calling" boxes at will—Development followed and resembled that of harness motions—Box motion incorporated in head conceived by Lucius J. Knowles—Many recent improvements—Problems of automatic pick-and-pick looms remain to be solved.*

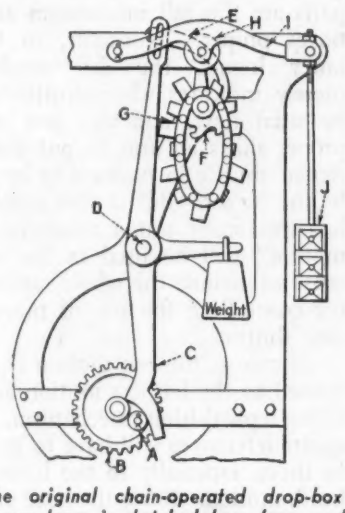
By C. W. BENDIGO, *Executive Editor, TEXTILE WORLD*

Loom box motions permit more than one color or type of filling yarn to be woven into a fabric. By means of them, shuttles are raised or lowered so that one shuttle may be substituted for another to produce a change in the fabric being woven.

Although the principle by which boxes are now automatically selected or "indicated" was adopted 100 years ago, the mechanisms employed for the purpose have undergone considerable developments.

Tracing the early development of box motions on power looms is largely tracing the work of individual inventors many of whom invented whole looms; whereas, more recent contributions to box motions have been refinements, additions, and simplifications which have not even now culminated in achieving goals set by loom engineers, such as fully automatic 4x4 box looms.

Box motions, along with heads for variable harness manipulation, distinguish fancy looms from plain looms,



The original chain-operated drop-box motion applied to a power loom is sketched here from a description and drawings appearing in British patent 10,462 granted to Squire L. S. Diggle, Bury, Lancaster County, England, in 1845. The roller A on gear B moved lever C pivoted on the loomside at D. This moved pawl arm E, which turned ratchet F and brought a new segment of the chain G against the roller H, which caused arm I to be lifted or dropped, thus moving boxes J up or down as desired. This is one of the simplest chain-operated box motions recorded. It has no intermediate box-motion proper such as is known today. In 1858, however, Diggle did revise his invention and provide an intermediate mechanism.

FIRST BOX MOTION WITH CHAIN INDICATOR

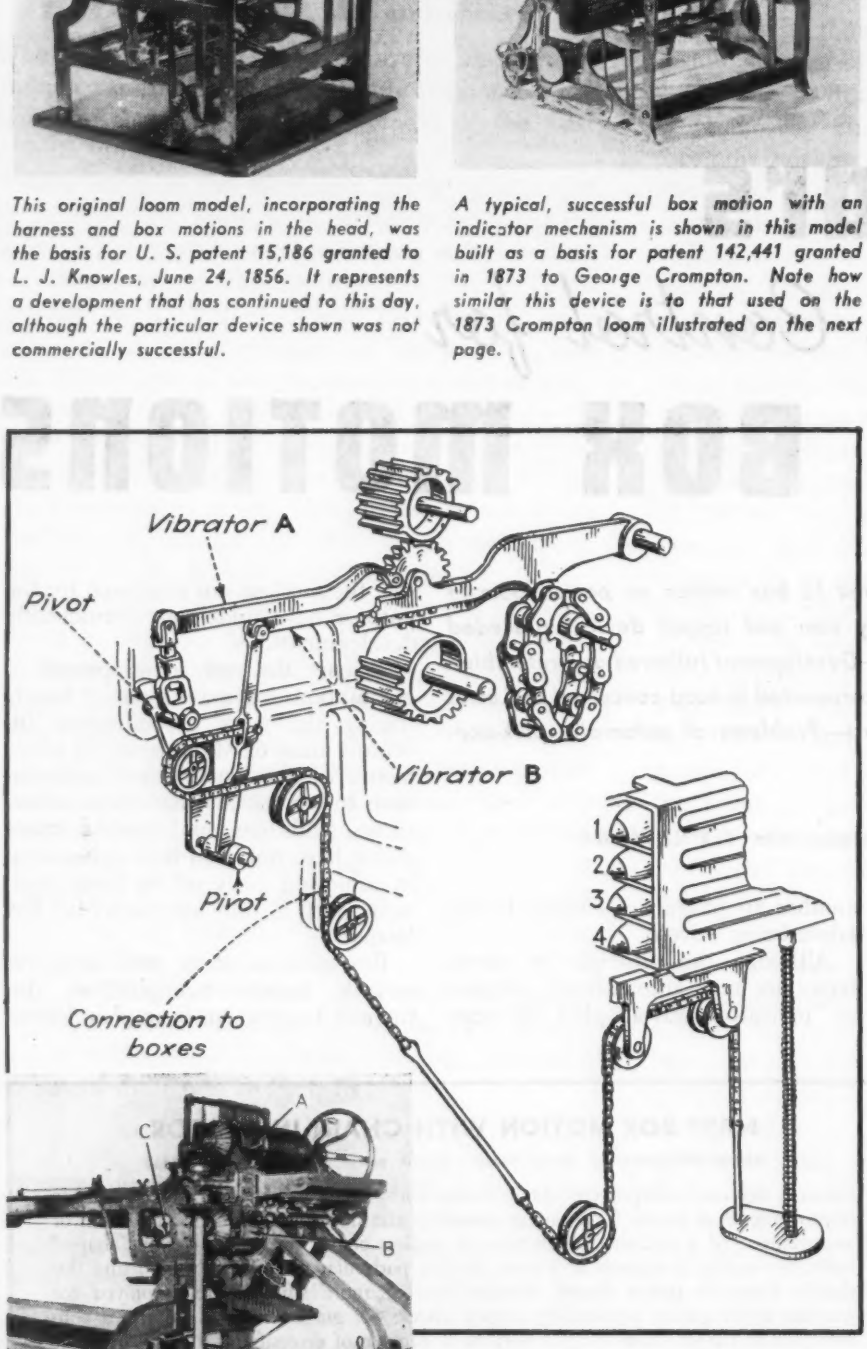
Official abridgement of Squire Diggle's British patent No. 10,465, A.D. 1845

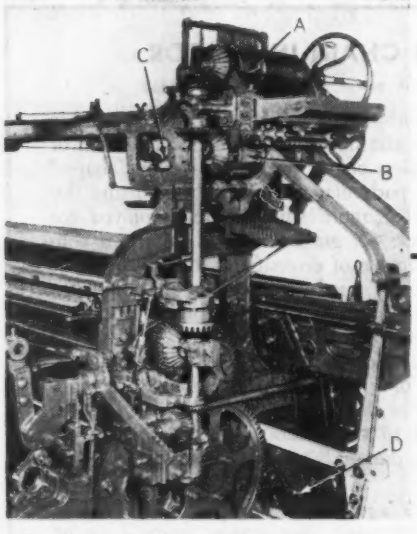
Diggle, Squire.—Improvements in looms for weaving. The patentee says, "My improvements in looms for weaving consist in the novel and peculiar adaptation or arrangement of a certain construction of endless chain, formed of various shaped links, and acting as tappets or wipers, for the particular purpose only of lifting the shuttle boxes in power looms, wherein two or more shuttles are employed for weaving fancy goods, particularly stripes, checks, or ginghams. My improved construction of tappet chain for this purpose is capable of diversifying the width of the stripes or check to the extent required in fancy goods, checked goods, or ginghams, by so arranging the tappets or links that any particular shuttle may be kept up during any given number of picks or shoots of which it is desired to form the patterns, simply by introducing tappets or links of different heights or elevations, and by arranging one, two, or more tappets or links of the same heights in contact with or successively following each other in the round of the pattern or chain, which arrangement will readily present itself to the practical weaver, as may be required to suit weaving or checked patterns or designs."

This original loom model, incorporating the harness and box motions in the head, was the basis for U. S. patent 15,186 granted to L. J. Knowles, June 24, 1856. It represents a development that has continued to this day, although the particular device shown was not commercially successful.

A typical, successful box motion with an indicator mechanism is shown in this model built as a basis for patent 142,441 granted in 1873 to George Crompton. Note how similar this device is to that used on the 1873 Crompton loom illustrated on the next page.

This 1859 chain-activated tappet box motion by M. A. Furbush and George Crompton had the first reversing motion to permit the cam to run forward and backward. This model and the other two shown are originals, as required from 1836 to 1880 by the Patent Office.





In the diagram, vibrator B only in mesh puts box 2 into position; vibrator A, box 3; both vibrators, box 4. Position shown is for box 1. Even the earliest Knowles woolen and worsted looms had box motions incorporated in the head, as does this woolen and worsted loom of today. The rear of each cylinder gear A and B has an adjustable section which drives the vibrator gears (not visible—see inset with silk and rayon loom for detail of a vibrator gear) which are raised and lowered by a box chain to make them come in contact with the cylinder-gear section. (For two boxes there is one vibrator gear; for four boxes, two as shown. A 4x4 box loom takes four vibrator gears.) The vibrator connects through a system of levers to pull the chain C which goes down to the loomside at D, back up, and down to actuate the boxes.

and they take many forms, depending on the work they are supposed to do. Currently, box motions are being made for 2x1, 2x2, 4x1, 4x2, and 4x4 looms, all but the last of which can be fully automatic. The term "fully automatic" implies that the filling can be replenished without stopping the loom; this may be done in some instances by replacing the entire shuttle and in others by replacing only the filling bobbin in the shuttle.

Earlier box motions had provisions for all sorts of box arrangements, including many 3x3 and some 9x1, as well as peculiar combinations which will be mentioned later.

BOX MOTION. Perhaps a clarification should be made here concerning the term "box motion." Strictly speaking, the box motion is only the intermediate of the three groups of elements which permit multiple shuttles to be used at will. The other two parts are the call mechanism and the boxes proper. Normally, in today's fancy looms, the call mechanism merely indicates what shuttle should be used next, and the box motion proper shifts an arm to put that particular shuttle in position to be struck by the picker. But in this article, unless specifically stated otherwise, "box motion" will be used in its broader sense to include the whole mechanism for controlling the use of more than one shuttle.

Of course, the box motion is closely related to the harness motion and the filling-replenishing mechanism. Frequent references will have to be made to them, especially to the harness, or head, motion. Since the head and box motions together are necessary to produce the more fancy woven designs (such as checks or any other pattern with both warp and filling variations), it is not surprising that on some looms

the call mechanism is often included with the mechanism which governs the harnesses. In addition to the call mechanism, the box motion proper can be included in the head-motion assembly. In the instances when the call mechanism only is in the head, the box motion proper is mounted on a plate on the loomside or directly on the loomside. In either of the latter two instances, the type is known as a "side-plate" box motion.

There are other, and older, box motions which do not have a flexible indicating, or call, mechanism; and looms equipped with such box motions are in use today. They are generally referred to as cam-operated box motions or Geneva motions. They are useful in such simple fabrics as Canton crepes, in which two picks of one filling alternate regularly with two picks of another.

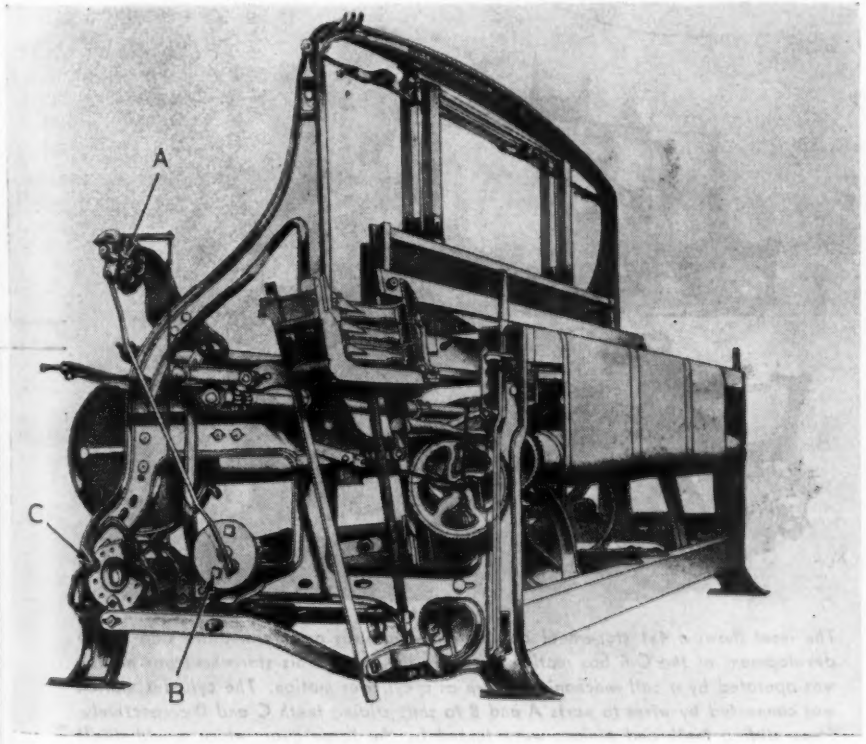
Other early cam-operated box motions were known as tappet-operated. They actually used cams also, but the cams were usually very irregular in shape and were actuated intermittently by means of a ratchet. (One type is illustrated.) This box motion was an intermediate step between simple cam-operated motions and the much more flexible chain-operated motions.

DROP BOXES. Today one rarely hears of any other shuttle-selecting mechanism than the "drop-box" type, which is essentially a mechanism for shifting two or more shuttles up and down vertically. It is of some interest to know that drop boxes were invented by the son of John Kay, who is credited with inventing the "flying shuttle" in 1733. Robert Kay, the son, produced his drop-box motion in 1760. Prior to the use of boxes to change filling from one kind to another, one shuttle had to be taken completely out of the loom before another could be used. Robert Kay's invention allowed two or more shuttles to remain in the loom, although weaving with only one at a time.

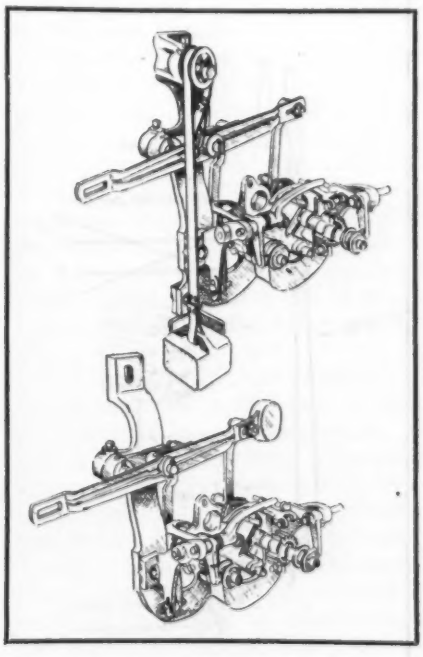
Naturally, boxes were eventually applied to the power loom, which was invented in 1785 by Dr. Edmund Cartwright. (Incidentally, Cartwright had never seen a hand loom before he invented and built a power loom. To tell the whole story, however, he did

Horace Wyman, left, one of the most prolific inventors of improvements for box looms, took out 59 patents as sole inventor and seven jointly with George Crompton, right, son of William Crompton. George Crompton's name appears on a total of over 110 loom patents.

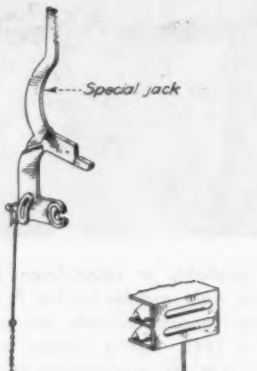
It is probably a coincidence that L. J. Knowles, right, and his brother, F. B. Knowles, left, both became actively interested in textiles in 1845, just a century ago. L. J. started with the manufacture of warps; and F. B., gloves. It was not until years later that L. J. Knowles became interested in looms, along with his inventions concerning steam pumps and their manufacture. Shortly after the middle of the century, the Crompton and the Knowles organizations became bitter rivals. The rivalry lasted until 1897, years after the death of all three principals.



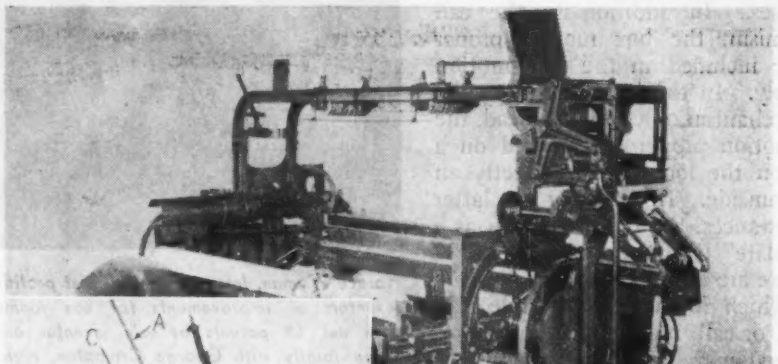
The 1873 Crompton loom had both a chain indicator and a reversing action for manipulating three shuttles. The chain A moved the disk B to cause the tappet C to turn. By simple leverage, the low, intermediate or high place on the cam brought the top, middle, or bottom box into place. The loom shown had a cam-operated harness, but this same box motion was also used with fancy heads.



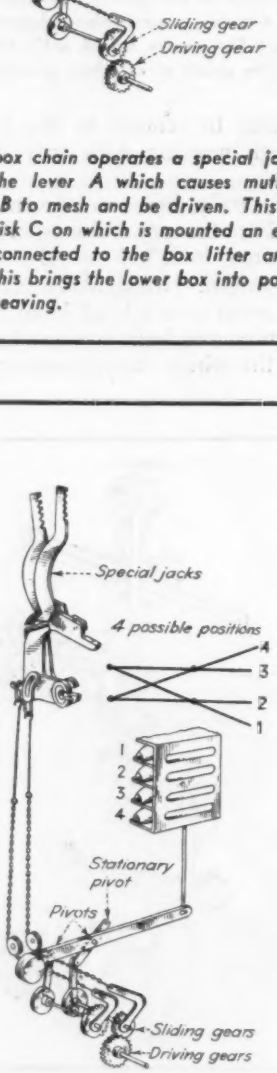
This pair of drawings typifies the unheralded changes which are continually being made in textile machinery. The hanging weight in the upper sketch of a box motion was replaced by a weight cast into the box lever lifter after it was found that the weight had not been applied in the right place to equalize the pressure on the gear teeth that actuate the box-lifting lever.



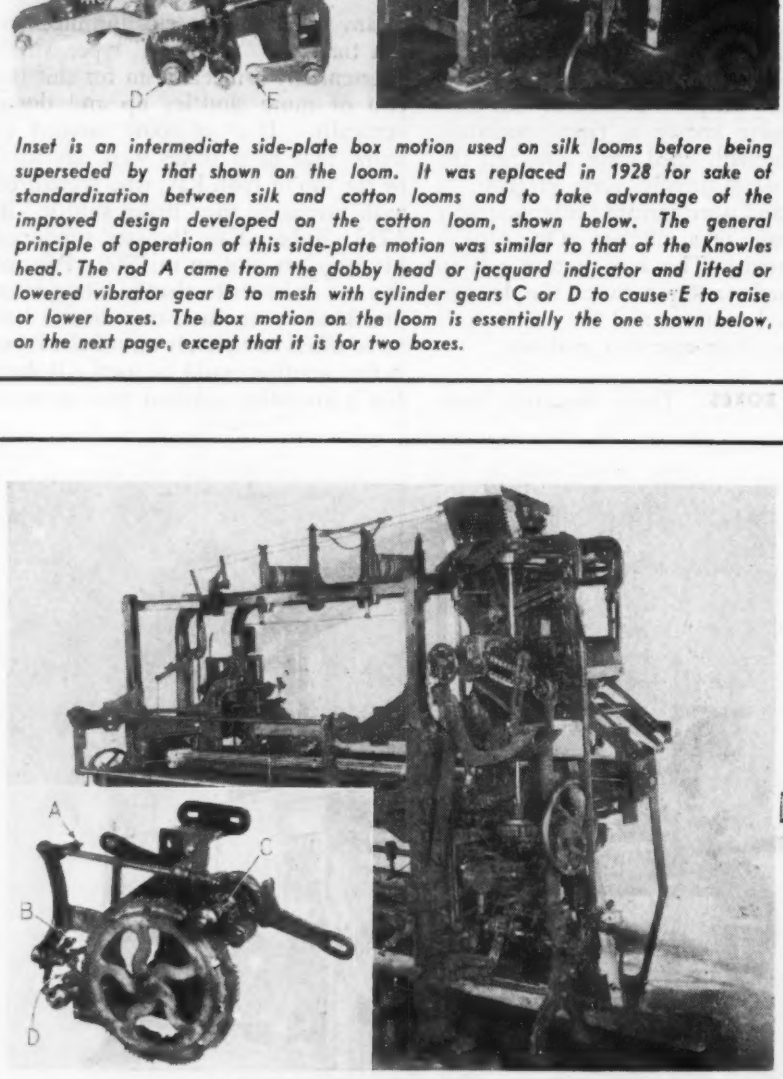
The box chain operates a special jack to lift the lever A which causes mutilated gear B to mesh and be driven. This turns the disk C on which is mounted an eccentric connected to the box lifter arm D, and this brings the lower box into position for weaving.



Inset is an intermediate side-plate box motion used on silk looms before being superseded by that shown on the loom. It was replaced in 1928 for sake of standardization between silk and cotton looms and to take advantage of the improved design developed on the cotton loom, shown below. The general principle of operation of this side-plate motion was similar to that of the Knowles head. The rod A came from the dobby head or jacquard indicator and lifted or lowered vibrator gear B to mesh with cylinder gears C or D to cause E to raise or lower boxes. The box motion on the loom is essentially the one shown below, on the next page, except that it is for two boxes.



This four-box mechanism works much the same as the two-box except that the leverage which lifts the boxes is compound. The sketch at the right shows the four positions of the cams needed to bring each of the four boxes into position.



The inset shows a 4x1 star-wheel box motion which was an intermediate step in the development of the C-6 box motion shown on the loom. This star-wheel box motion was operated by a call mechanism known as a cylinder motion. The cylinder motion was connected by wires to parts A and B to shift sliding teeth C and D respectively. These sliding teeth and pinions were turned by the large gear, which would dwell after each second pick upon advancing one section of teeth. Each pinion was fastened to a shaft with a crank on the end (not shown), so that the cranks moved the lifting lever to the four positions necessary to put the boxes into place as desired.

see a hand loom after building his first model and, as a result, improved his invention.)

Although there were earlier applications of multiple shuttle boxes to power looms, it seems that the first of the called (or indicator) box motions actuated by a chain—much as we have them today—was invented by Squire L. S. Diggle, in Bury, England. He patented it in 1845. Some records of textile history have confused this invention as one of the tappet (cam) types, since he used the term tappet to describe the links in the chain which indicated the box to be used. The Squire took out a patent in 1858 which further improved his device of 1845 and made the call mechanism more positive. A simplified copy of his patent drawing portraying his first motion is illustrated on page 87.

At least four, and undoubtedly more, American inventors applied box motions to power looms before Squire Diggle patented his arrangement in England. For some unknown reason, he did not patent the invention in the United States. In 1840 Erasmus Bigelow (of carpet-loom fame) had a cam-operated 2x2 box loom for weaving counterpanes. Miles Berry, also in 1840, also had a carpet loom with boxes, but they fastened to the loom-side rather than to the lay. This was a novel idea, but it failed to survive. Thomas Flynt in 1842 had a loom with a rotary box in the front part of the lay and a drop box in the back—he proposed to use it for ingrain three-ply carpet weaving. Luke Smith in 1842 or 1843 went Bigelow and Flynt one better: he proposed to use a circular change box and to throw two shuttles through two sheds simultaneously, in conjunction with a box motion. J. Neild in 1843 patented a box motion operated by "circular plates" which in turn could be operated by other circular plates, and in this he approached a call mechanism as well as a multiplier mechanism (patented in 1883 by Horace Wyman for harness mechanisms).

PRINCIPLE REMAINS. The Squire Diggle invention, while less pretentious than those just listed, was, however, based on a principle which has stood the test of time. It is conceivable that someone else deserves credit for originating the called box motion along the principles used today, but it does seem that called boxes were not used on American looms to any appreciable extent before the Knowles loom of 1856 and 1857 (built in 1863) and the Cromptom loom of 1857. Starting around that time, Knowles and Crompton became bitter rivals principally because of the looms mentioned. The main difference between the two box motions as a hole was that Knowles' indicating mechanism was a part of the head motion whereas Crompton's was adjacent to it. (The first fancy power loom, patented by Crompton in 1837, was not a box loom.) Both operated three boxes without filling replenishment.

It is of interest to note that the rivalry over box motions contributed much not only to drive the Knowles organization to the manufacture of looms for weaving wool while the Crompton organization specialized on looms for weaving cotton but also to cause the two companies to merge in 1897. One of the suits between the two companies, in 1895, was over the adjustable cylinder section for driving vibrators of the box motion. The 1897 merger settled the involved litigation.

Although the original 1856 Knowles loom had "a box motion controlled by the same pattern chain that controls the harness," this loom was not built until 1863, and only two were manufactured with harness and box motions combined. The G. W. Stafford Manufacturing Co. also had a drop box on its power looms prior to its first absorption by the Knowles Loom Works in 1893.

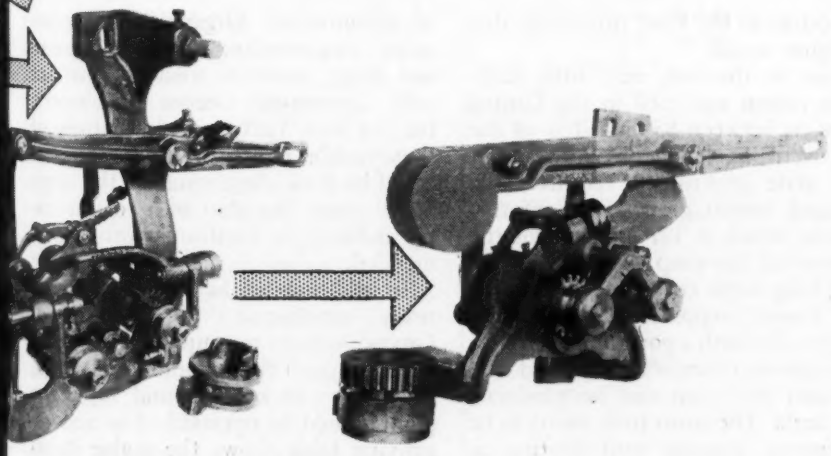
TRANSFERS. The problem of applying boxes to power looms was relatively simple compared to applying boxes to fully automatic looms. The first automatic box loom appeared about 1896, but it was far from satisfactory. The big problem (unsolved until 1907) was to get the right magazine to change the filling in the right shuttle in a split second. One loom, in 1898, was set up to change each bobbin after a predetermined number of picks no matter how much yarn remained on the bobbin; thus no feeler was necessary.

Another loom used a circular magazine with alternating colors. It was only 25% effective for four-color work because, after one color was used in a group of four, the magazine had to shift to another section of four colors. Only in this way would a full bobbin of the right yarn be sure to be ready for the next transfer.

Eppa H. Ryon is credited with the solution of the multiple-box changing problem. He developed the delay action used today whereby the change takes place one pick after indicated. This gives the right filling from the magazine ample time to be ready for the lightning transfer. Thus transfers are quite successful in 4x1 automatic looms, as the magazines can be at one end of the loom and the boxes at the other.

But on automatic 4x4 looms, or on any others with many boxes on both ends, the amount of mechanism required becomes unwieldy. The problem of making such looms fully automatic remains to be solved, although devices have been developed for simply "mixing" filling on automatic looms—that is, inserting a series of shuttles which do not change the fabric pattern but which do prevent filling threads of off-sized yarn from running adjacent to each other and causing thick or thin places through long lengths of fabric.

Crompton and Knowles built a 4x4 automatic loom which was displayed about 15 years ago at the textile show in Boston, but it never became a commercial success.



As indicated, both the cotton 4x1 box looms and the rayon 2x1 now use the same box motion. At right is shown an improvement over the mechanism at the left. For diagrams of how the motions do their work see the sketches on the opposite pages. The latest box motions for postwar looms is timed a little differently to give the fixer more leeway in setting.

Plans for CALIFORNIA Cotton Mill Suggest Trend to West

HIGHLIGHTS: *Plant with 400 looms and 15,000 spindles can demonstrate best use of California cotton and can be financially successful, report shows—Tests reveal that acala fiber should have light beating and picking to keep down neps—West coast garment industry expected to be market for the mill—Operation probably three years off.*

Kearn, Kings, and Tulare Counties are actively interested in developing fiber and cloth production in California.

A California cotton-textile industry is rather definitely indicated in an engineering report which recommends the building of a $2,500,000 weaving and spinning plant somewhere in the San Joaquin Valley.

Operation of a cotton spinning and weaving plant in California now seems to be economically sound, although as late as January, 1941, it was not thought to be so. Although the proposed mill would use annually only 8,000 bales—5% of the California cotton crop—it is felt that its successful operation would tend to increase demand throughout the country for California cotton and would attract additional mills if the West Coast textile trend of the last four years continues. This trend is based largely on the recent rapid development of a garment industry on the West Coast and on increased cost of manufacturing textiles in the East, principally due to higher wages.

Prior to the war, very little California cotton was used in the United States, as between 85 and 90% of the crop went to Japan. Due to rather rigid state government control, the principal cotton grown in California is acala, which is 1⅜ in. long for the majority of the crop. As is true with most long-staple cotton, it has a tendency toward neppiness. Recent tests, however, by both a government agency and a private concern have proved that A− and B+ yarn can be produced with acala. The main trick seems to be less severe opening and beating as well as lower card production.

STUDY MADE. When it definitely appeared that Japan would not again be a major purchaser of California cotton, the San Joaquin Valley Association of Commercial Organization Secretaries (representing Tulane, Kearn, and Kings counties) made a contract with Lockwood Greene Engineers, Inc., of New York, to make a study of the situation and to recommend what could be done. As a result of the engineers' study, the start of a cotton-textile industry in California was recommended.

In addition to the several facts already mentioned, the Lockwood-Greene report recommended in detail the plant that should be started, the fabrics to be run, and how the plant should be operated. The accompanying table shows the major items of equipment which were recommended.

Combers and twisters included in the machinery schedule have capacity for only about one-third of the yarn produced, the remainder of the yarn

will be carded. More combing and twisting capacity could be added later if needed. The table shows a larger number of cards than is normally used since tests have shown that acala cotton should be carded more slowly. The mill will be expected to work its cotton waste into coarse fabrics. It will operate two shifts of 40 hours each; and the number of employees, exclusive of office and sales force, is expected to be about 135 on each shift, 60% male and 40% female.

It is not expected that a California textile mill, as recommended, would get under way much under three years, since machine builders indicate that it will be about two years before they can supply the necessary machinery.

The mill, according to the report, would have an annual capacity of about 11 million yards, consisting principally of denims, twills, seersuckers, poplins, gabardines, and other fabrics which can be warp-dyed or piece-dyed. The report recommends against the production of print cloth or any cloth which could not be finished in California where a finishing industry has begun to take root.

As indicated, the aim of the mill would be to make only those fabrics which can be used in the West Coast garment manufacturing plants. It is expected that the mill could supply about two-thirds of known major needs of the West Coast garment industry for certain types of fabric; but, of course, by the time the mill is in operation, this industry may have continued its trend of expansion.

VERSATILITY. The outstanding feature of the mill is to be its versatility. It is to be equipped with spinning and weaving machinery designed for the widest possible range of yarn and fabrics. Automatic looms to be installed are expected to operate at 192 picks per minute and to be 46-in. wide, so as to produce finished fabrics up to 42-in. wide. The width of the fabric is expected to give the mill competitive advantage with other mills which are not equipped to manufacture goods that will finish any wider than 36 in.

According to the recommendation, the initial mill should not have finishing operations other than for goods which can be packed and shipped directly from the mill without additional finishing. For this purpose, equipment includes a simple finishing range consisting of a water mangle, starch mangle, dry can, tenter, Sanforizing machine, calender, and winder. However, the site is to be so planned and the initial plant so constructed that a bleaching and finishing plant could be added at a later date.

The approximate dimensions of the suggested mill building are 250x600 ft., with a floor area of 151,000 sq.ft., including space for warehouse and office. The boiler plant is planned to be separate from the main building and will be sufficient only for processing steam and heat. Power would be purchased from a power company. It is estimated that the building would cost over a half million dollars and the textile machinery well over a million.

COTTON CHARACTERISTICS. In 1940, Riverside & Dan River Cotton Mills demonstrated the use of California cotton in the manufacture of sheets for Acala Fabrics Co., of San Francisco. Generally, however, most California cotton loses its identity during manufacture and is not recognizable in the finished product.

In general, cotton grown on irrigated land such as that in the California cotton-producing area has different characteristics from rain-grown cotton. An outstanding one is 4% moisture content, compared to 8% for a similar rain-grown cotton, such as delta.

The Department of Agriculture has reported that California acala cotton grown at Shasta in 1943 had 1% less waste than the average of all 25 Department of Agriculture stations reported. In neppiness it was found to be the average, but it has fewer neps than the average of six varieties grown at Shasta. The department reported that for the last several years the strain of acala being generally grown in California has consistently shown it is not excessively neppy. It is expected that this strain will have replaced all others by the end of this year.

MANUFACTURING EQUIPMENT
Recommended for California Mill

Opening & Picking
- 10 Feeders
- 1 Feed table
- 2 Openers with condensers
- 2 Automatic control feeding systems
- 2 Electric controls and distributor
- 2 Beater pickers
- 2 Two-beater waste machines

Carding, Drawing, Combing
- 144 Cards
- 4 Lap winders
- 112 Deliveries of drawing
- 6 Twin-head combers
- 1 Lap winder

Roving
- 9 Roving frames

Spinning
- 57 Spinning frames (total of 15,048 spindles)

Twisting
- 6 Dry twisters

Spooling & Warping
- 1 Barber-Colman spooler
- 1 Barber-Colman warper
- 1 Tailing machine

Slashers
- 2 Slashers with hoods, kettles, and size-circulating system

Warp Tying
- 1 Barber-Colman portable tying machine

Winding
- 6 Winders
- 10 Automatic filling-bobbin winders

Weaving
- 400 46-in. Draper looms, Model X-2

Cloth Room
- 1 Sewing and rolling machine
- 2 Inpecting machines
- 1 Scray
- 1 Vertical brusher
- 1 Shearer
- 1 Rolling hood
- 1 Air filter
- 1 Folder
- 1 Re-rolling machine

Waste Room
- Equipment to recover waste

Dye House
- Beam-dyeing equipment

Finishing
- 1 Water mangle
- 1 Starch mangle
- 1 Dry can
- 1 Tenter
- 1 Calender
- 1 Simpson winder
- 1 Duplex Sanforizing machine

GAS-FADING of Acetate Can Be Minimized

HIGHLIGHTS: *Proper selection of dyes will do much to help—Protective agents and chemical inhibitors aid greatly—Fastness requirements, durability, equipment, and finish govern methods or materials used.*

By N. D. LOBAR

FOR MANY YEARS, the fading or change in shade of various cellulose-acetate dyes by gaseous impurities in the atmosphere has been an irritation to the dyer of acetate fibers and fabrics and a source of complaint from convertor, cutter, and consumer. As a result, a great deal of research work has been, and is, going on in an effort to produce more satisfactory dyes. At the same time, equally strenuous efforts have, and are being, made to develop inhibitors and protective agents which will lessen or offset the effects of the fading gases.

The colors which comprise the group known as acetate dyes are relatively few in number. Examination of the Color-Index reveals only several of these as prototypes; although from their shade and other properties, certain colors made by different manufacturers are quite similar in reaction. The range consists of a number of yellows, a few oranges, quite a few reds and bordeaux, several browns, a good number of blues and violets, and various blacks. There are no greens in the acetate group.

GAS-FADING. Gas-fading is a term used to designate the loss in depth or radical change in shade occurring when certain colors are exposed to the atmosphere. It has no connection with loss of depth or shade change brought about by exposure to sunlight, although both may go on simultaneously.

Gas-fading is the result of chemical action on the acetate colors, brought about by the presence of certain gaseous combinations in the atmosphere. Fumes from gas-burners, oil-stoves, coal-fires, and electrical heating coils are known to affect certain of the acetate dyes. Since one or more of these sources of heat are found in every part of the country, there is no area in which dyed acetate fabrics are immune from gas-fading. The danger of shade changes, of course, is greater in cities and areas of greater population, since there higher concentrations of gases such as from heating units are apt to exist. The oxides of nitrogen seem to be most prevalent and are the most troublesome, although other acidic gases affect the shade as well.

The colors most apt to be affected are the blues and violets, but certain reds are affected also. Of the blues, those made from anthraquinone are the most sensitive to atmospheric fading. What makes this fading so bad is not only loss of depth but also, on a sufficiently long exposure, a complete change of the shade to a pink or red. Blues of the azo types do not exhibit this characteristic; they are far faster to gas-fading. When they do fade under prolonged exposure, they usually lose depth slightly, with little change in cast.

SELECTION OF DYESTUFFS. One answer to the problem is most obvious, it would seem—select colors which are not susceptible to gas-fading when making a shade, thus all these troubles are over. This method of solving the problem is used, but it is by no means a universal answer. A dyer, before selecting a color, must consider several questions such as the shade itself, the fastness requirements, nature of the fabric, type of dyeing equipment, money value, etc.

For example, the acetate blues which are prone to gas-fading are the brightest, clearest blues of all, especially if a greenish or neutral cast is required. Therefore, they may have to be used in order to match the shade. In addition, this group of blues are quite fast to sunlight, so they are a must for drapery fabrics, decorated seat-covers used outdoors, sportswear,

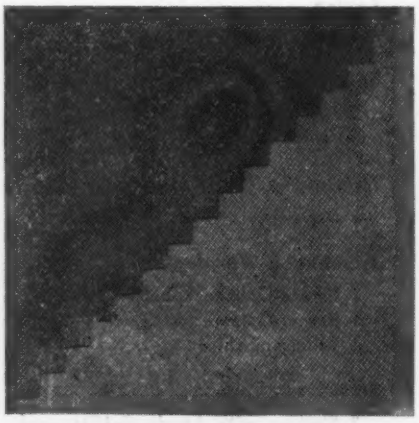


Fig. 1. Anthraquinone blue—original and after exposure to fading gas.

Fabrics in Figs. 1 and 2 were both exposed at the same time.

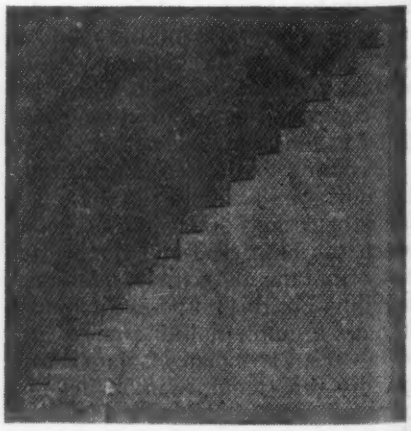


Fig. 2. Azo blue—original and after exposure to fading gas.

Fabrics in Figs. 3 and 4 were both exposed at the same time.

trimming, etc. On the other hand, the finisher of linings, for example, would not be so interested in light-fastness, but probably would be more concerned as to sublimation, perspiration fastness, and resistance to dry-cleaning. Some blues change noticeably under artificial light, usually going much redder. Thus, fabrics going into such items as evening gowns require careful selection of color, for it might be embarrassing to be wearing blue under one light and violet under another.

Fabric make-up is an important consideration, too. Is it an all-acetate fabric or a blend of fibers? If of all-acetate construction, shade, fastness, and end-use will probably determine the choice of color. However, with mixed fibers in the fabric, dyeing temperatures become important as it is inadvisable to dye certain fibers over 150° F. Some acetate colors stain other fibers rather badly, thus ruining white effects. Also, in cross-dye effects, a degree of staining may take place that will prevent the dyer from getting his shade on the other fibers. These factors must be taken into consideration, along with the ones previously mentioned.

Most of the anthraquinone blues will dye and level reasonably well at temperatures ranging from 160° F. to 200° F., with good money values even at the lower temperatures.

The blues which are most resistant to gas-fading unfortunately are dyed best at temperatures of 190° F. to the boil. A relatively slight reduction in temperature can well produce selvage to selvage and end to end taper in jig-rolls or an uneven, mottled, or streaked condition in pieces dyed in kettles because of the uneven exhaustion. The lower temperatures also result in poor color value. Almost all of the acetate colors are definitely sensitive to dyeing temperatures, so that the maintenance of uniform temperatures is quite important. These particular blues, however, are affected so much by temperatures that it is not recommended to dye them except in closed jigs or kettles in which high and uniform temperatures can be maintained. The rolls or strands do not have a chance to cool off when out of the dye liquor, as is the case with open kettles and jigs. Their use is, therefore, pretty well limited to the dyehouse having such equipment.

As any dyer of acetate rayon knows, additional problems in color selection are presented by special shades and fabrics. Here other considerations may outweigh gas-fading properties when making up color combinations.

PROTECTIVE AGENTS. Much attention has been given to physical and chemical methods of protecting and inhibiting the gas-fading tendencies of acetate dyes.

If a continuous film is deposited on and over the dyed acetate fiber—which, in itself is resistant to fading gases and does not react with them—such a film prevents these gases from reaching and reacting on the dye. Theoretically, a large number of materials can be used for this purpose, but actually, only a few are in general use. For example, glue, gelatin, a number of natural and synthetic gums, and natural and synthetic resins, a variety of fats and waxes, cationic softeners, and the like offer film-forming possibilities.

Glues and gelatins, as well as the natural gums, work satisfactorily when applied in sufficient concentration to form a rather thick film. Such films, impart a decided stiffness to the cloth and are also likely to change the shade to some extent. This decidedly limits their use, since there are few acetate fabrics or mixed fabrics containing acetate in which a firm finish is desired, except, possibly, upholstery or tapestry fabrics. Not too much use has been made of these substances as protective agents, probably because very thin films do not resist the passage of gases too well, and because of the difficulties encountered in plasticizing the thicker film to produce a soft, pliable hand.

The field of natural and synthetic resins offers possibilities and, we believe, would yield fruitful results if investigated in more detail from the angle of protection against gas-fading. However, only one resin, melamine[3], has been developed for this purpose. This resin must be applied under carefully controlled conditions of temperature and concentration; but when so applied, it is said to offer adequate and durable protection. Whether the protection afforded is due to surface coating of the fiber and therefore of the dye, an intimate combination between colors and resin molecular aggregates within the fiber, a chemical reaction between the resin and the fading gases, or a combination of several of these possibilities is somewhat obscure.

Wax emulsions of certain types afford very good protection. A number of commercial types work very well and several wax aluminum-salt water repellents do a most satisfactory job. In fact, probably many wax emulsions will work efficiently. The wax-type water repellents are not only desirable finishes from the standpoint of gas-fading, but also their water-repellency properties add to many fabrics. The same is likely true of a number of cation-active softeners which exhaust on the fiber, are difficult to remove, and possess desirable softening properties.

There is at least one repellent on the market that is specifically recommended for use on acetate fabrics, and one of the gas-fading inhibitors seems to be, basically at least, a cation-active softener.

Again, the question of finish becomes important. Because of the poor absorption properties of the acetate fiber, materials of waxy or fatty nature coat the surface. This is fine as a protection against gases, but is apt to create break marks or the condition known as "scratching white." These objectionable features are most likely to show up on flat fabrics such as taffetas, satins, and twills made of filament yarns. All-acetate spun mixtures, spun and filament blends,

(Continued on page 188)

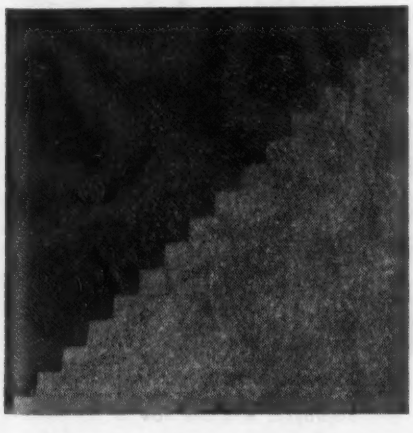


Fig. 3. Shade dyed with anthraquinone blue —not treated for gas-fading. Original and exposed sample.

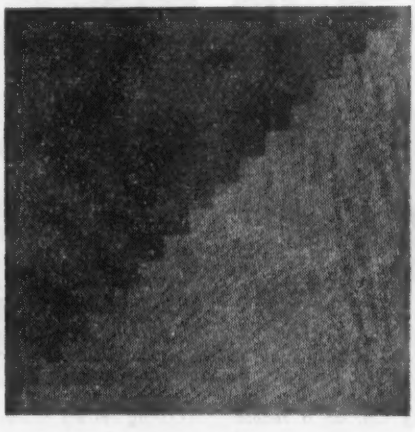


Fig. 4. Shade dyed with anthraquinone blue —treated with inhibitor. Original and exposed sample.

LABOR-MANAGEMENT Committee Unifies Wool Combing Plant

By HOWARD S. KNOWLTON
New England Editor, TEXTILE WORLD

HIGHLIGHTS: *— Committee at Barre Wool Combing Co. brings about better understanding of production conditions and draws management and labor into closer working relationship — Social activities promoted include encouragement of healthful surroundings for work and play, and war service activities.*

A VISITOR TO THE BUSY PLANT of the Barre Wool Combing Co., Ltd., South Barre, Mass., is quickly impressed with the varied problems and interests which enter the day's work in this important establishment. This plant is devoted to the production of vital textile material destined to meet the exacting demands of war service. Enough wool top has already been processed here to make about 8,000 miles of cloth, largely assigned to uniforms. This production record has already earned the 760 employees the Army-Navy "E" four times and today the mill is meeting its share of the Quartermaster General's most urgent needs.

At South Barre these accomplishments and these responsibilities have been helped greatly by the success of the plant's Labor-Management Committee, which brings the benefit of "many men and many minds" to the practical discussion of the multifarious problems constantly arising in such an establishment.

FORMED IN 1943. Following preliminary experience with cooperation in principle by employee and management groups on a relatively small scale in connection with transportation, absenteeism, suggestions, and war bond sales, the Central Labor-Management Committee was organized on Aug. 4, 1943, to represent the views of both labor and management. In simple terms, as expressed by Levon M. Yacubian, mill manager, "To help the people of our mill to help themselves," is the purpose of this committee. This means that the committee will lend its assistance to any person or group in the plant which has a problem not covered by the established collective bargaining procedure.

At South Barre those interested in setting up an "L-M" Committee, so called for short, tried to profit by the experience of others in industry and reached the definite conclusion that an L-M Committee must be a special tailor-made job, arranged to fit the particular plant. The fine, unselfish cooperation given to the preliminary work at South Barre by a relatively small group of individuals to help all people in the mill resulted in the formation of an L-M Committee as a final step in the development.

It was happily found that there was no great problem in working out the details of how to launch the committee between the union and the management in this mill. It was natural to agree to exclude all legitimate union business from L-M activity. It was agreed to recognize the fact that L-M must not supplant the union or assume the functions of management. The objective was to set up a properly directed force in which both union and management work together for the good of the whole. Complete harmony between union and management as to the direction which L-M activity will follow is the foundation of L-M success. The basic idea of

During open house held at Barre Wool Combing Co. on a recent Sunday, members of families of mill people and their friends inspected the mill. Shown are a number of guests looking at samples of wools of various grades which were laid out in an instructive exhibit on the top floor of the mill.

Writing letters to former mill employees who are now in the armed services is one of the many morale-building ventures sponsored by the L-M Committee. Girls aiding in this work are: (left to right) Esther Mastronardo, Mamie Cappello, Anne Struckowski, Elena Velardo, Rose Bullero, and Marguerite Puliafico.

switch is too high and should be lowered about six inches. Honorable Mention.

AH3919 Suggests that white lines be painted across the street between main gate entrance and Nornay entrance as a safety zone for people crossing between mills. Reason: For safety and to eliminate the blocking of entrances to mill. COMMENT: This matter has been referred to the Safety Committee. Honorable Mention.

AH3918. Suggests—(1) "The Barre Wool Combing Company" [illegible] Backwasher. COMMENT: A good suggestion which will be tried. Merit Award. $2.

B7551: Suggests that the panels of No. 1 and No. 2 Backwash Dryers in the Mixture Plant have their number painted on them. REASON: To prevent a panel going in the wrong position. They are now numbered with chalk which rubs off easily. COMMENT: A good suggestion which will be tried by painting the number on the inside of the panel. Merit Award $2.

B7508: Suggests a thermostat be installed on steam line to Backwash

B7572: Suggests that the top press on the first floor of the Main Mill be lowered so that the bottom rests on floor level rather than on present level which is some 4 inches higher than the floor. REASON: It will be easier for girls to pack top. COMMENT: The press is located at its present height so that the doors of the press may be opened when top trucks are along side of the press. If the press was lowered this advantage would be lost. A further disadvantage would be that the top bag would have to be lifted when it is removed. Now, it rolls out pretty much by gravity. No Award.

B2527: Suggests that the belt forks on a Noble [illegible] needed on the second shift. No Award.

B7590: Suggests that more of an off-set be put in the shipper arm of a Noble comb so that when a person is piking out a circle there is no danger of that person being hit on the head by the shipper arm. COMMENT: Such an off-set in the shipper arm might be of advantage to the person who is piking out, but it would be of doubtful advantage to the comb minder. It certainly is dangerous if a person stands in the wrong position when piking, but if a long piker knife is used and if the person piking stands in the right position, there is no danger. Honorable Mention.

B7564: Suggsts a spring steel clamp be used to hold roller rubbers on

Portion of a page from "Barre Wool Topics," in which the suggestions offered by the employees are reported. Each suggestion handed in is acted on by the L-M Committee and action taken is indicated in the mill paper.

THE BARRE WOOL COMBING CO. LTD
WOOL TOP IS ESSENTIAL IN WAR.
AS A WORKER IN THIS PLANT I AM ESSENTIAL EVERY DAY IN THE PRODUCTION OF ENOUGH WOOL TOP FOR 0 SERVICE MEN'S UNIFORMS
YESTERDAY OF US WERE ABSENT.
AMERICA LOST WOOL TOP FOR UNIFORMS BECAUSE OF THESE ABSENTEES.
DIFFERENT DEPARTMENTS DIVIDED THE TOTAL ABSENTEES AS FOLLOWS:
DEPARTMENTS
1ST. SHIFT
2ND. SHIFT
3RD. SHIFT
WAREHOUSE, TRAPPING BAGROOM, SHIPPING
BINROOM, SCOURING CARDING
COMBING, BRUSHSHOP PINSHOP, PACKING
MIXTURE PLANT
MAINTENANCE
TOTAL SHIFT ABSENCES
TOTAL PLANT ABSENCES FOR THIS WEEK
OUR BOYS WILL REMAIN WELL CLOTHED ONLY AS LONG AS EACH OF US WORKS FOR ALL OF THEM EVERY DAY.
OUR SAFETY RECORD
DAYS WITHOUT A LOST—TIME ACCIDENT

Graphic presentation as to what absences mean in terms of lost uniforms for our armed forces appears upon a billboard at the entrance of the mill. This is another of the accomplishments of the L-M Committee in its campaign against absenteeism.

helping the mill people to help themselves provides the test as to whether any particular activity belongs to L-M or not. Such proper L-M activities include encouraging the purchase of war bonds, guidance toward safer ways of work, provision of shared transportation, stimulation of plant cleanliness, and reduction of absenteeism, to mention only a few.

L-M provides a common ground, so to speak, on which people can meet and talk over problems which arise, the field of endeavor being limited only by the interest shown by all concerned. From the start, the committee has invited everyone in the mill to suggest means and methods by which his interests can be served. This has led to discussions of widely separated subjects ranging from recreational activities through victory garden undertakings, athletic contests, and to safety engineering practices. Open house to relatives and friends of employees at the mill, lawn parties honoring veteran employees, awards for service, suggestion system activities, sanitation, letters to servicemen, and nutrition aids were other items considered.

ATTITUDE OF LABOR. In some plants the establishment of an L-M Committee seems to have been accompanied by insufficient backgroud understanding of objectives, particularly in connection with labor relations; but this has not been the case at South Barre. A statement by the president of the union local in the company house organ, *Barre Wool Topics*, bears this out:

"—Labor-management means: Labor and management working together, comparing notes.

"The purpose of Labor-Management from labor's point of view, as I see it, is to get the employees to take an active interest in their own welfare, both in the mill and at home, outside of union activities. The purpose of Labor-Management is not and may not in any way supplant or interfere with the regular bargaining machinery in the mill. Its real purpose is a civic one and deals with health, sanitation, food, transportation, etc. We of labor have a great interest in the civic welfare of our members and wholeheartedly support and join in comparing notes on any of its phases.

"The benefits from Labor-Management can be far reaching if a realistic interest is shown in fulfilling its purpose. In transportation alone there are many helpful hints available to aid in lessening the burden in these trying war times. Then too, we would be short-sighted indeed if we did not recognize the benefits from better toilet and rest room facilities, cleaner and more sanitary places to eat, helpful hints from the nutrition department, the aid of the nursery center, and help in putting aside the cares of the day by the recreation and social groups. Labor knows these things can be done.

"Labor-Management is not a new thing. There are thousands of such committees throughout the country. Some are good, some are bad. Mostly it depends on how they are set up as to whether they are a success or not, and the degree of support they receive. Since there is no blueprint to guide the establishment of a committee each one is different from the others. One can be successful if 'real purpose' is the base of the foundation, 'sincere belief' the walls, and 'cooperation' the roof. Labor will do its part."

SOUTH BARRE ORGANIZATION. The original central L-M Committee consisted of nine labor and three management representatives, but the growth of the work has expanded this to 15 members, twelve being elected by labor and three by management. So far the chairman has been a management representative, elected by the group. A member of the Central Committee is chairman of each subcommittee, and these sub-committees cover the following subjects: Servicemen, Absenteeism, Social and Recreation, War Bonds, Nutrition, Victory Gardens, Suggestions, Safety, Health and Sanitation, Transportation. Two labor representatives are members-at-large on the Central Committee.

The chairmanship of the Central L-M Committee rotates yearly. Committee meetings are held in a gathering room at the plant about every two weeks, and as a rule last about 2½ hr. on company time if a person is normally working at meeting time. It is the plan to change the committee personnel yearly in order to distribute representation widely through the plant. The suggestion, servicemen,

and safety sub-committees meet regularly. Others meet as subjects arise requiring sessions, but much work goes on continuously under these. The Central L-M Committee does not possess executive or mandatory authority, but its recommendations carry much weight in the executive direction of mill affairs, and contribute to cohesiveness of functioning in all mill departments.

EXAMPLES OF L-M WORK. The work of L-M is so diversified that space permits only abbreviated references to specific activities. However, some of these taken at random are significant of the scope and interest of this work. The suggestion sub-committee's work is extremely comprehensive. For instance, all suggestions for improvements are deposited in suggestion boxes placed throughout the mills. The person submitting a suggestion retains a numbered receipt and the suggestion is transmitted to the sub-committee, unidentified as to source. This insures maximum freedom at both ends of the transaction. The suggestions are thoroughly and sympathetically analyzed and are then reported by number in *Barre Wool Topics* along with the sub-committee's findings as to feasibility and award, if any. The suggester turns in his receipt to the receptionist and receives his reward. The awards often receive "honorable mention" in cases where the idea is already under consideration; but cash awards have been paid ranging from $2 to $100.

Letters to servicemen form a highly appreciated activity in the mill. These are sent regularly by groups meeting for the purpose, and in encouraging this service, emphasis has been laid upon the morale-building value of news from the mill and home areas. A monthly prize of $5 is given for the best letter from a serviceman as adjudged by the committee.

The recreational and social activities sponsored by L-M are almost endless in variety and appeal. These include minstrel shows, garden parties, bowling contests, dedication of new facilities in the mill with an appropriate party on the premises, a series of "production veteran's" parties where 186 service pins have been conferred, indicating from 40 years' to 15 years service, and open house hospitalities.

One of these last affairs was attended by 1,500 persons, and they were shown the plant on a recent Sunday during the hours of 12:30 p.m. to 3:30 p.m., arrangements being made by the L-M Committee, Harry Morrison, general chairman. Guests were registered near the main entrance inside the plant and then taken to the top floor on elevators to see an exhibit of wools of all grades. Visitors then proceeded to the binroom where wool is blended and stored after being graded. From this point the trip proceeded through the carding, backwashing, preparing, combing, and finishing operations, and then to observe the scouring operation and the packing of the finished product, wool top. Visitors were conducted to the mixture plant where wool top is dyed and blended to produce the various shades of khaki required by the armed services. Twenty-two servicemen from Fort Devens, who have been giving much of their spare time to work in the South Barre plant from 6 to 10 p. m. each evening, worked on the night before the open house and remained to work on Sunday.

The object of this open house was to acquaint people with the processing done in the plant and to emphasize the vital necessity of increasing wool top production for the armed forces. Army officers from the Quartermaster Depot in Boston and from the headquarters of the Wool Top Special Project Team in that city were present. A feature was music by the 368th A.S.F.T.C. Colored Band from Fort Devens, which played for parade, concert, and retreat ceremonies.

The plant has been operating on a 138 hr. per week schedule since November, 1940. Employees come from a radius of 20 miles (Fort Devens servicemen come 41 miles). Forty percent of the employees are women. Twenty-five Jamaicans were added to the company's working forces this spring to help on the wool top production.

In the Sixth War-Loan drive the employees subscribed for $15,000 worth of bonds and in the Seventh are taking the bonds at the rate of $8,000 per month. A sub-committee devotes much time to this activity.

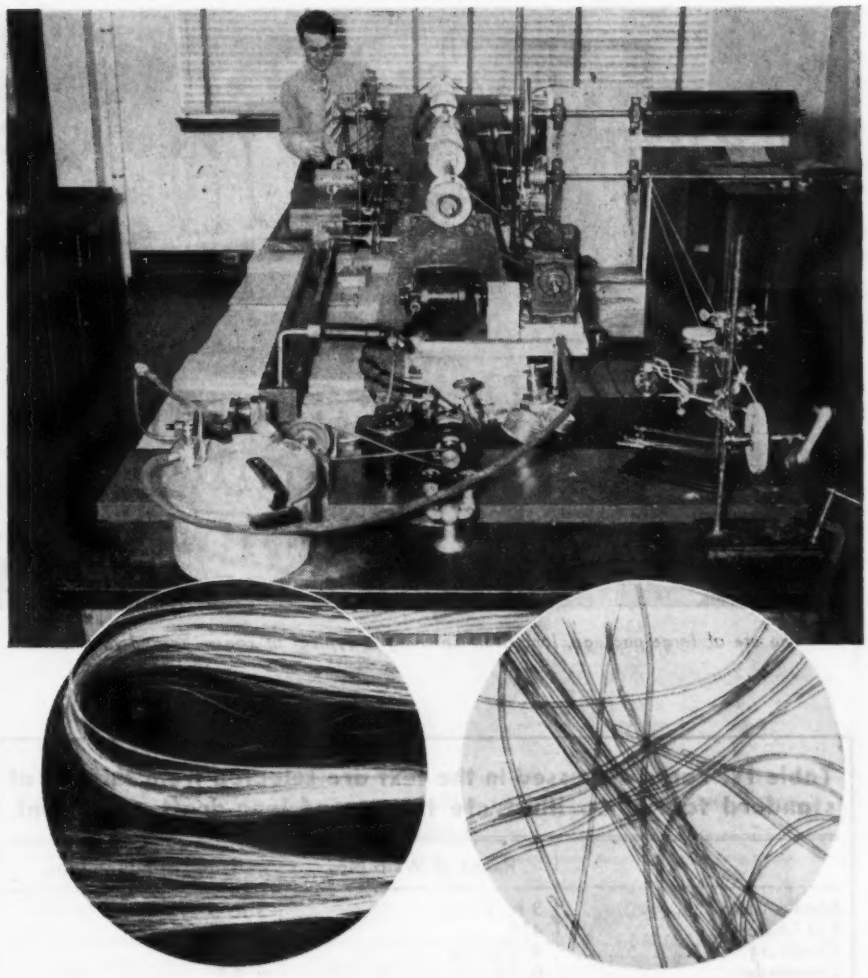
A nursery school has been established in South Barre close to the mill to enable young children to receive the best of care while their parents are at work. This provides recreation, nourishment, supervised play, story-telling, rest, and helpful companionship during the hours it is in session. The school has received high rating from the state authorities.

It is of course difficult to measure in figures the results of the work of an L-M Committee in a wool combing and dyeing plant; but, there can be little question of its value from the standpoint of bringing employees into closer touch with management, and vice versa. Over a period of years an organization of this kind, functioning on the basis of informal discussions of problems and working shoulder to shoulder for the good of the men and women who provide the personal service essential to successful manufacturing activities, grows increasingly useful when inspired by good-will and frank relationships. While the strain and stress of a global war have played a part in unifying employees and management to aid the common cause, it seems safe to predict that when peace comes, L-M will continue to serve as a highly essential organization in helping to maintain the company's reputation and service in the textile field.

Story-telling time at the nursery school. This school, established by Barre Wool Combing Co., has received a high rating from the Massachusetts State Department of Education.

Keratin Proteins Yield Better SYNTHETIC FIBERS

HIGHLIGHTS: *Hard proteins such as from horny part of feathers and hoofs have fibrous molecular structure—Yield stronger product than that from soft proteins—Western Regional Research Laboratory continuing experimental production.*



Experimental spinning equipment in Western Regional Research Laboratory. Spinning "dope" container and coagulating bath is at the left, and fiber proceeds around the table. During process it is washed, stretched, dried, and reeled. Below, experimental fibers made from technical egg white. (Left, apparent size, right, magnified.)

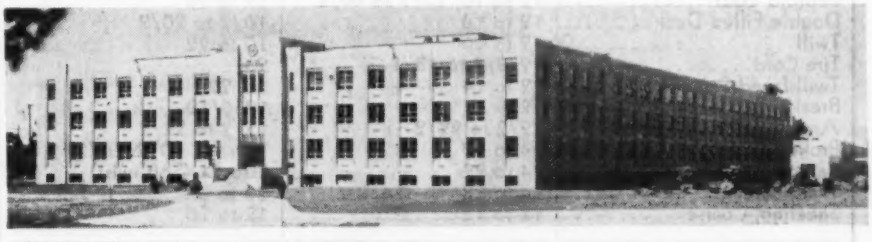
SINCE SEVERAL FACTORS have stimulated interest in the work on synthetic or artificial fibers from keratin and other proteins, investigations directed toward industrial uses of the various types of protein available in agricultural raw materials were included in the original program of the regional research laboratories of the U. S. Department of Agriculture. Keratin protein, the type represented by such materials as feathers, horns, hoofs, and hair, was among those assigned to protein research workers in the Western Regional Research Laboratory at Albany, Calif.

It is well known that wool and silk are natural protein fibers possessing strength, warmth, elasticity, and ability to hold dyes. It seems possible that, through application of techniques and knowledge developed by the rapidly advancing science of fiber technology, raw protein materials can be made to yield new and highly useful fibers for numerous specialized purposes. Fibers having high resiliency and curl as well as strength are examples of types that are needed. The fundamental science of fiber construction is closely related to that of plastics and related materials, including such useful products as films for coatings and packaging materials, adhesives, and the numerous familiar molded articles.

TWO PROTEINS. The proteins produced in nature are structurally of two kinds: those of protective tissues, designated as keratins, and those of the soft tissues of both animals and plants. The keratins have been found by physical measurements to have a fibrous molecular structure; their long-chain molecules are extended linearly and are locked in this position. These materials are resistant to the solvent action of acids and alkalis, soften to a limited extent when heated, absorb water and swell readily without disintegration, and are somewhat resistant to the action of micro-organisms and enzymes.

The proteins of soft tissues, on the other hand, are shown by physical measurements to be roughly globular or spherical in molecular structure. They dissolve readily in water solutions of acids and alkalies and soften with heat, especially in the presence of water. They absorb water and swell to an extent approaching dissolution and are readily attacked and acted

(Continued on page 178)



Western Regional Research Laboratory, Albany, Calif., where new synthetic fibers are being produced from proteins.

Mill Organizations Vary For COARSE CARDED YARNS

The use of large-package, long-draft spinning is typical of coarse carded-yarn mills.

Table IV. Yarns discussed in the text are selected from this list of standard fabrics to illustrate the use of long-draft equipment.

	Range of Warp Nos.	Range of Filling Nos.
Monks Cloth	3 to 5	3 to 5
Flat Chafer	4½	3½
Osnaburg	4½ to 14	3½ to 12
Cottonade	6, 10	6, 12
Waffle Cloth	7/2	7/2
Hard Cord Net	7/3/3, 7/3/4	7/3/3, /7/3/4
Duck, Numbered	7/3 to 14	7/3 to 14
Sail, Naught	.....	.....
Denim	7 to 16	8 to 23
Duck, Flat oz	8 to 14	5 to 12
Dobby Drapery	8 up, 12/2 up	8 up, 12/2 up, 5 20-Spiral
Filler Twill	8/4	8/4
Hickory Stripe	8½	11 to 20
Whipcord	9½ to 20	11 to 18
Coverts	9½ to 19	8 to 21
Pin Stripe Checks	10 to 16	12 to 20
Chafer Duck	10/4	10/4
Boat Duck	10x2	10x2
Warp Twill	11 to 24	8 to 22
Chambray, Work Shirt	12 to 28	12 to 28
Bedford Cord	12 to 16, 20/2 to 40/2	12 to 20
Double Filled Duck	12 to 14	10/2 to 20/2
Twill	12 to 20	10 to 22
Tire Cord	12/3/2 to 15/3/3	23
Twill-faced Sateens	12 to 14	10, 22
Breaker Fabric	12½ /5	12½/10
Army Duck	12/2 to 22/2	15/2 to 22/2
Broken Twills	14 to 20	7 to 10, 10/2–16/2
Canton Flannel	14 to 22	5 to 11 (Soft twist)
Warp Sateens	14 to 28	22 to 42*
Sheeting, Coarse	12 to 15	12 to 16

* Note: A few fine yarns are included in the ranges of yarns given.

HIGHLIGHTS: *Various spinning drafts are used on standard hank rovings because of the variety of yarns produced—Cotton grade and preparation, yarn numbers, equipment, and manufacturing know-how determine machine layout—Typical organizations for a few coarse carded yarns reveal different practices.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

MILL-TO-MILL VARIATIONS in cotton, yarn numbers, and equipment cause wide differences in the technical organizations of mills producing coarse carded yarns. The individual mill also reveals variations in its methods for determining drafts, doublings, and technical layouts. This is true in the case of drafts, for example, because the mills generally produce a wide variety of yarn numbers, and for reasons of economy they prefer to vary spinning drafts on a few hank rovings rather than to produce a large number of hank rovings. While the use of long-draft equipment for roving and spinning is considered standard practice, the operation of sliver-preparation machinery differs not only because of the variables present in the cotton itself but also because of the variables in the experience and know-how of the individual mill in manufacturing its particular products.

Manufacturing experience determines the organization details such as doublings, drafts, settings, speeds, and total number of processes. Good spinnability is as desirable in the carded-yarn organization as in the higher-quality organization, and cleaning and preparing the lower grades of cotton require a technique as specialized as that employed in processing higher grades of stock.

When spinnability, grade, and staple strength are satisfactory, carded-yarn mills exact the most effective use of long-draft equipment. Good spinnability, particularly, characterizes the

(This is the second of a series of articles on mill organizations which feature long-draft equipment. See July TEXTILE WORLD *for the first article. Editor)*

yarns produced from an efficient machine layout. On lower grades of cotton, some organizations use a slightly shorter draft than those on better grades of cotton; but they utilize the long-draft slubber or intermediate to produce single-creel roving for long-draft spinning frames. Exceptions to the latter are noted in heavy, quality yarns such as tire-cord and knitting yarns. These are frequently made from double-creel roving.

The variety of manufacturing methods in the coarse carded-yarn mills is further reflected in the sliver-preparation machinery. While some organizations may call for single-process drawing, others may use Bi-coil, Controlled-draft, or regular two-process drawing. Since most mills are familiar with organizations which use one-process or two-processes drawing, some of the organizations selected for this article include Bi-coil and Controlled-draft drawing.

DUCK YARNS. The organization which will apply to all mills has never been devised, and the layouts suggested as typical of some coarse carded-yarn mills are not expected to apply to all mills. They are given only as examples of the use of long-draft equipment and the newer processes of drawing in the manufacture of the yarns used in the fabrics listed under Table IV. Typical yarns are selected and their organizations are estimated for the long-draft equipment described in Table I of the first article in this series.

Since one of the most important products of the coarse carded-yarn mills is the present war-production of duck yarns, one of these is selected for the organization shown in Table V. The yarn shown is 6.50s, as this number is used interchangeably for warp and filling yarns. The cotton staple is from $\frac{7}{8}$ to $1\frac{1}{32}$ in. The optional sliver-preparation layout includes Bi-coil and controlled-draft drawing, although most actual organizations would probably include regular one-process or two-process drawing. For the short slubber draft, many mills would use a conventional rather than a long-draft slubber.

Duck yarns usually range from 4s to 9s, and all of these can be made from .70 hank roving. Since few mills are able to specialize in one or two numbers of yarn in the spinning room, the organization must permit a range of numbers from the same hank roving. Most mills consider the range when they lay out the organization so that yarn changes in spinning may be made without requiring a change in the roving processes.

(*Continued on page 182*)

Table V. An organization of 6.50s duck yarn, 4.75 x sq., used for both warp and filling.

Process	Factor	Doublings	Calculation	Counts
Spinning	Contr. 7.73% Draft 10	1	0.9227|6.50 10|7.04	6.50, 4.75 x sq.
Slubber	Draft 5	1	5| .70	.70 H.R.
Controlled-draft drawing	Draft 16	16	.14 hank 16|60 3.75 x 16	60 gr. sl.
Lap-winder	Draft 1.04		60 gr. x1.04	
Card	Draft 100 Waste 5%		62 gr. sl. x 100 .95|6200 437.5 |6526	62 gr. sl.
One-process picker			15 oz. lap	15 oz. lap.
Optional Drawing				
Bi-coil drawing	2nd Process Draft 4 1st Process Draft 4	4 4	4|60 gr. 15 x 4 4|60 gr. 15 x 4 60 gr.	60 gr. sl. 60 gr. sl.
Regular drawing	Draft 6	6	6|60 gr. 10 x 6	
Card	Draft 100 Waste 5%		60 gr. sl. x 100 .95|6000 437.5 |6316	
One-process picker			14.5 oz. lap	14.5 oz. lap

Table VI. A practical spinning-draft range used by one mill for .70 hank roving.

Spinning draft	5.71	7.14	8.57	10.00	11.43	12.85
Yarn number	4.00	5.00	6.00	7.00	8.00	9.00

Table VII. An organization of 11.50s tire cord, 3.25 x sq., made from 1-1/32-in. cotton, is an example of a yarn in which double roving is used.

Process	Factor	Doublings	Calculation	Counts
Spinning	Contr. 3.75% Draft 14.94	2	0.9625|11.50 14.94 |11.95 .80 x 2	11.50, 3.25 x sq.
Interdraft 9x4½	Draft 11.30	1	11.30 | 1.60	1.60 H. R.
Controlled-draft drawing and Lap winder	Draft 16 Draft 1.04	16	.14 hank 16|60 3.75 x 16 60 x 1.04	60 gr. sl.
Card	Draft 100 Waste 5%		62 gr. x 100 .95 |6200 437.5 |6526	62 gr. sl.
One-process picker			15 oz. lap	15 oz. lap

The INDUSTRIAL NURSE Sells Health and Safety

HIGHLIGHTS: *A health and safety program saves one plant $12,000 annually—Labor turnover and absenteeism decreased—Nurse invaluable in teaching first aid, safety, and healthful living to employees.*

By ETHEL P. MOOG, R. N.

THE RESPONSIBILITY of the employer for the safety and health of his employees has been recognized for many years. Apart from the legal and moral obligations, statistical reports compiled by insurance companies and such organizations as the National Association of Manufacturers prove that a sound industrial health and safety program is a good investment.

A healthy worker is a happy worker; and an employee adequately protected from industrial hazards is a satisfied employee. Sickness and accidents cost money. They cost lost wages to the worker and lost production to the employer. They lower morale and engender employer-employee friction. It is the job of the industrial nurse to maintain the highest health and safety standards possible, and thus to help prevent wage and production losses to labor and management.

The industrial nurse discovers the causes of accidents and reports hazards to the safety committee.

As a rule, the nurse is part of the personnel department. Policies and procedures recommended by her are usually handled through the personnel director, and instructions for the administration of her department are received by her through the same channel unless, as in some plants, her reports are made directly to the manager or superintendent. However, legal standards and professional ethics demand that medical and technical procedures be laid down by the plant physician or a consulting physician engaged for the purpose.

HEALTH PROGRAMS. The nurse must be a good saleswoman. Safety and health procedures are things which must not only be sold in the first place, but also must be kept sold. All too frequently, safety and health programs are adopted with great enthusiasm, only to die out after a few months or to continue in a half-hearted, lingering fashion. Unless management is behind such programs 100%, they might as well not be attempted.

Sometimes the failure of an industrial-nursing program is the nurse's own fault. The nurse must recognize that the primary job of management is to run a plant economically and profitably for its stockholders. The best sales argument to advance in support of any program is proof of the savings or increased production it will afford.

The industrial nurse, therefore, should be a statistician. Facts are what management wants. Dig out back records, and with them establish a few facts which cannot be overlooked. How many accidents occurred? How much time was lost? How much production was lost? How much did all these factors cost?

COST OF ABSENCES. Remember that direct costs are only the beginning. Brundage, in *Public Health Reports*, Aug. 21, 1936, estimates that the cost to the employer of a day's absence by a worker amounts to 1½ times the day's wage. Using this figure, Dr. C. O. Sappington, editor of *Industrial Medicine*, cites, in his book, "Essentials of Industrial Health", the costs and savings in a 500-employee plant before and after the introduction of a health program.

He puts the average direct cost of compensation for an accident or an occupational disease at $246. Before the introduction of a health program in this plant, the number of such cases a year was 25, representing a direct cost to the company of $6,150.

Absences caused by sickness and non-industrial accidents not included in the above figure, averaged nine days per employee, or 4,500 days lost. Using $5 as an average day-wage and the Public Health Reports' proportion of 1½, Dr. Sappington puts the cost of absences to the employer at 4,500 times $7.50, or $33,750.

These two items represent a loss of $39,900 to the employer. In addition, the employees lost $22,500 in actual wages.

SAVINGS EFFECTED. After the introduction of a health program, there was a reduction of 47% in accidents and occupational-disease cases and 28% in days lost because of illnesses and injuries. Thus, the savings were:

47%	x	$6,150.....	$2,891
28%	x	$33,750.....	9,450
Total		.....	$12,341

The annual cost of the program was $13.46 per employee, or $6,730 for the plant. The net saving for the company was $5,611.

The savings in wages to the employees was 28% of 4,500 days at $5 per day, which amounted to $6,300.

In addition, Dr. Sappington reports a reduction of 24.5% in labor turn-

over and 26.4% reduction in compensation insurance programs.

Facts and figures like this will sell industrial nursing to the management.

DUTIES OF NURSE. Among the many duties of the industrial nurse, the most important is first aid. When accidents occur, the nurse must be available. If her duties have called her out of the plant at such times, there should be qualified workers to give first aid and to judge what steps should be taken next. There is often a reluctance on the part of the foreman and other employees to take the necessary time to qualify for this work; yet, if the nurse is to develop the value of her department to the fullest, there must be a sufficient number of qualified persons ready and able to take her place when the emergency arises.

The nurse must keep at it. She should have a list of the workers or supervisors who have taken first-aid instruction, and should never let the number get below a definite minimum for each shift. When it does approach the minimum, she should see that other people are given fundamental first-aid training.

In the plant where the writer is employed, the nurse now personally interviews each new employee, either at the time when he is hired or within a few days. The purpose of this interview is to advise him of proper health and safety conduct; and the method has been found very successful. At the time of the interview, the nurse can observe the employee's physical condition and, while not attempting to substitute for the doctor, can advise him as to the physical demands made by the new job and how he can best maintain his health for meeting those demands. The nurse can also advise him of the occupational hazards of the job, the precautions he must take, and how and where to get safety shoes, rubber gloves, goggles, masks, and other safety aids.

JOB SAFETY. It is obvious that such a program requires that the nurse be familiar with every job in the plant. She should secure from the personnel manager a complete analysis of all the jobs, or at least of the more hazardous jobs. The analysis not only should describe the work and how it is done, but should also cover the physical requirements, the tools and equipment, the working conditions, and the hazards of the job. So equipped, the nurse can give invaluable aid to the employment department in its efforts to prevent the assignment of a worker to a job which would endanger his health. This phase of industrial nursing is extremely important in these days when practically all male workers hired have been rejected for military service.

Health and safety education are, of course, important services rendered by the industrial nurse. Articles in the plant magazine and posters on the bulletin boards are media through which she can reach the worker. If employees are urged and encouraged to visit the nurse for personal ailments as well as injuries, she has an excellent opportunity to offer advice and counsel for more healthful living. In this way, she gains the confidence of the worker so that he not only comes to her in regard to his own health, but also will often bring his wife or a sickly child.

WORKER CONTACT. The nurse should strive to make every individual-worker contact an educational one. On many problems of sanitation and first aid, dietetics, infant welfare, as well as on moral, domestic, and occupational troubles, her counsel will be freely and usefully sought by employees if she has won their confidence.

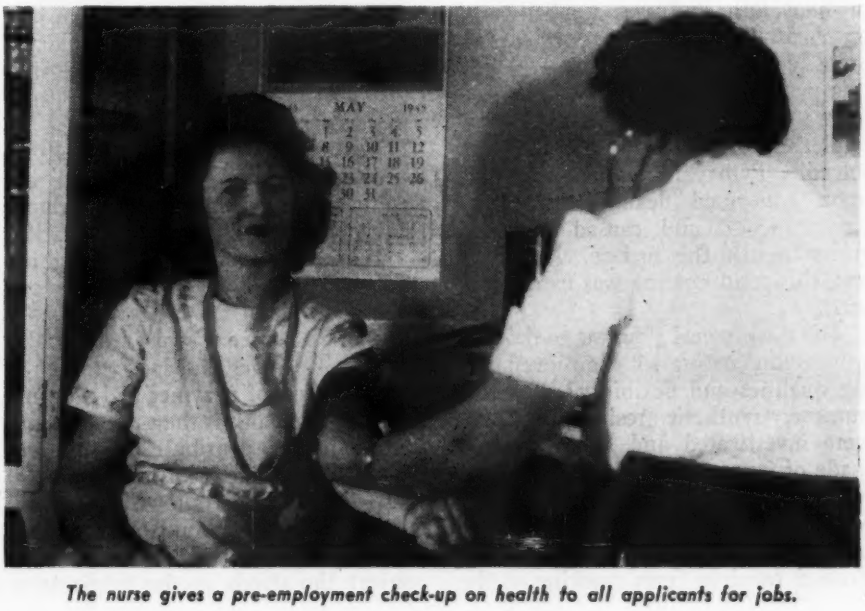
This brings up the question of how far the nurse should go in home visiting. Some companies have their nurses visit any employee who has been absent from work for two consecutive days in order to see if possible illness is being properly cared for. As long as this visit is made in a spirit of genuine helpfulness, much good may be accomplished; but if any suspicion is aroused in the worker that the nurse is policing absentees, all the good she is trying to do will be defeated.

It is part of the nurse's duty to inspect the plant daily. Upon such inspection tours, she can study the causes of accidents and discover hazards and unhealthy working conditions. She can also see that sanitary facilities are kept clean.

A visit to the home of a sick employee typifies the best in present personnel practice.

Probably once a week, this inspection is made in company with the safety committee or safety engineer. The safety committee likely will come to depend upon the nurse for advice and help regarding accident rates and the causes of accidents.

Not only does the industrial nurse have the satisfaction of helping the sick and injured, but she is also making a vital contribution toward keeping the wheels of American industry turning smoothly and regularly. Today, of all times, there is not a job of more importance.



The nurse gives a pre-employment check-up on health to all applicants for jobs.

SYNTHETIC RESINS Enhance Today's Book-Bindings

HIGHLIGHTS: *Printing press made book-bindings necessary—Pyroxylin was first synthetic resin used—Numerous plasticized synthetic resins now improve quality and add durability to bookcloth.*

By RICHARD A. BORTON
Chief Chemist, L. E. Carpenter & Co.

THE BIBLE IS PROBABLY one of the first books in which a series of stories or thoughts were assembled in one unit. When it was no longer possible to roll these stories into huge scrolls, the first book binding was developed.

Early bindings were of soft, fine leather, skillfully embossed and tooled. Naturally, later large-scale printing made the fine leather bindings generally impractical, so substitutes were used, such as cardboard and fabric, both of which had some drawbacks.

The development of synthetic resins gave to the bookbinder an opportunity to provide bindings which would have the outstanding properties of leather at the low cost of fabric. Pyroxylin was one of the first resins to be used in bookcloth and was applied over starch-sized linen cloth to give a soil-proof, long-wearing binding. While this pyroxylin coating represented another major advance in the bookbinder's art, it left many problems unsolved. Pyroxylin tended to crack upon continued flexing, the plasticizers spewed and caused dirt and grime to mar the surface. Nevertheless, this resin coating was extensively used.

The next logical step was to develop a pyroxylin coating with improved ageing qualities and flexibility. For this purpose, synthetic resin plasticizers were investigated and a coating was made of pyroxylin and a long-oil alkyd resin (Paraplex) which remained flexible upon aging or exposure to low temperatures and wore well. This coating showed freedom from cracking at the binders, resistance to water spotting, and no spewing of the plasticizer.

It was realized that while the surface coating might do much to improve bookcloth, it was necessary to improve the starch-sized cloth base before a product of real satisfaction could be obtained.

PREPARATION OF BOOKCLOTH. The production of bookcloth entails the desizing and dyeing of the cloth, starch sizing to obtain tension, tentering to minimize dimensional change, pyroxylin coating, embossing, and calendering. Careful control of all processes must be maintained to secure finishes which are tough, water and mildew-resistant, attractive in appearance, and capable of being printed upon, clearly and legibly.

The desizing operation preparatory to dyeing is best accomplished by treatment with certain enzymes which remove the sizing from the fabric with a minimum of destruction to the fabric itself. One method which gives excellent results on the light-weight cotton fabrics customarily used on books consists of passing the cloth through a water-solution of enzymes and wetting agents. The cloth is then run through squeeze rolls to distribute the solution thoroughly. The cloth, containing 100% moisture, is allowed to stand from four to twelve hours or overnight, after which it is washed. The enzymes convert the starch in the fabric to a more soluble form, insuring complete removal in the washing operation.

In the dyeing operation, it is important to control not only the concentration of chemicals in the water but also the water itself to prevent variations in the shade of cloth obtained during dyeing, since the presence of undesirable mineral salts, or other impurities in the dyewater may have a decided effect on the appearance of the dyed cloth. Thus, it is necessary to condition the water before the dyeing operation. This is effected through the use of a water purification system, equipped with synthetic ion exchange resins. By use of these ion exchange resins, it is possible to remove completely all soluble salts or "deionize" the water, rendering it comparable to distilled water in softness and purity. In operation, raw water is passed through beds of cation-exchange resins. The first, or cation exchanger, converts the salts present in the water to the corresponding acids and the cation exchange in the second bed completely removes these acids, yielding water free of all soluble salts.

SIZING AND COATING. The starch sizing of cloth normally consists of knifing the starch paste on the fabric and passing the fabric over a series of heated rolls to remove the water. The starch provides a filler for the cloth and an excellent surface for the subsequent application of synthetic-resin coatings.

Coating book cloth with synthetic resins involves passing the cloth

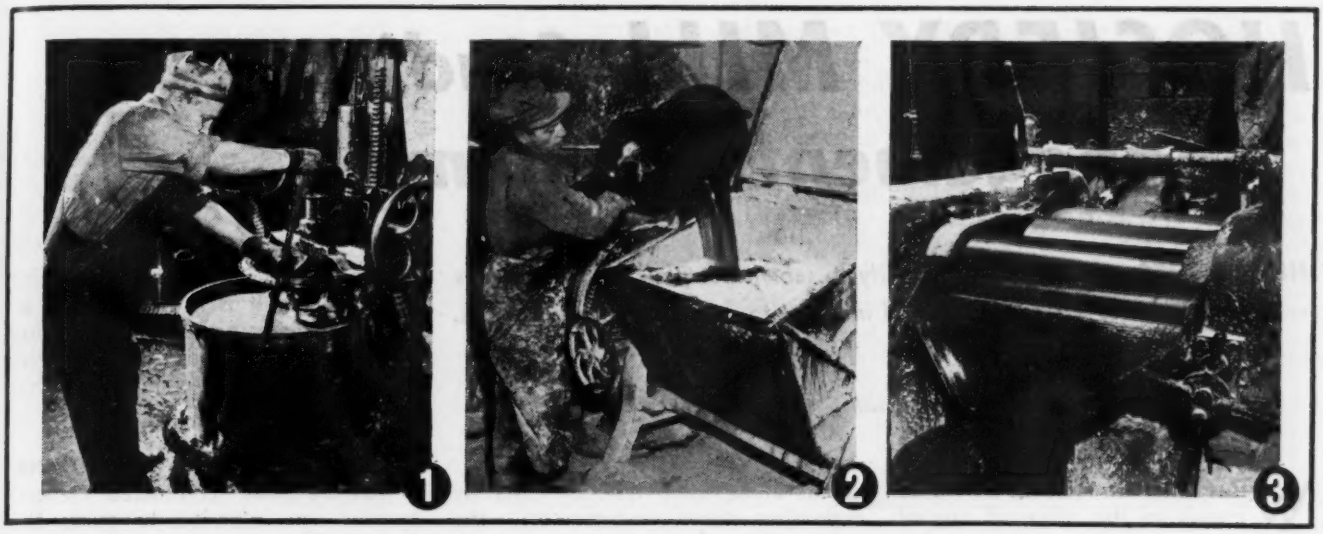


Fig. 1. In this pony mixer, the nitrocellulose paste for pyroxylin coatings is prepared. The resins added to this mixture at this point make the cloth durable, waterproof, and mildew-resistant. **Fig. 2.** *After being thoroughly mixed in this vat, the resins and pigments are now ready for pigment grinding in a high-speed mill.* **Fig. 3.** *The pigments, resin binders, and plasticizer are here dispersed in the grinding vehicle, developing color uniformity and eliminating all lumps in the mixture.*

through a trough containing the resin solution or knife-coating the fabric. The solvent is then removed as the cloth passes through a heated tunnel, and the process is completed by passing the fabric through calender rolls. Subsequently, a pattern may be embossed on the cloth in an embossing press.

A unique process, recently developed by L. E. Carpenter & Co., Newark, N. J., involves an unusual resin combination characterized by rapid polymerization at the normal embossing temperature and permits a leather-like pattern to be embossed on the cloth at the same time the resin is cured to its final, insoluble rubber-like state. This method promises to make available a host of new, distinctive finishes in the postwar period.

Pyroxylin coated fabrics, prior to the war, were usually formulated with nitrocellulose and castor oil compounds. During the war, a number of synthetic resins have become commercially available, so that there are now great numbers of raw materials to select from when producing high-quality simulated-leather or unique bookcloths.

Among the combinations which can be used are thermosetting polyvinyl butyral, polyvinyl chloride, improved types of nitrocellulose and ethylcellulose, cellulose aceto butyrate, cellulose aceto propionate, and a variety of synthetic rubbers. In nearly all of these materials mentioned, new plasticizers of a resinous nature have been developed, which has made the application of these products to cloth feasible.

A group of unusual plasticizing resins are extensively used in cloth coating. These resins are unusual in that they are permanently non-oxidizing and retain their flexibility over an unlimited period.

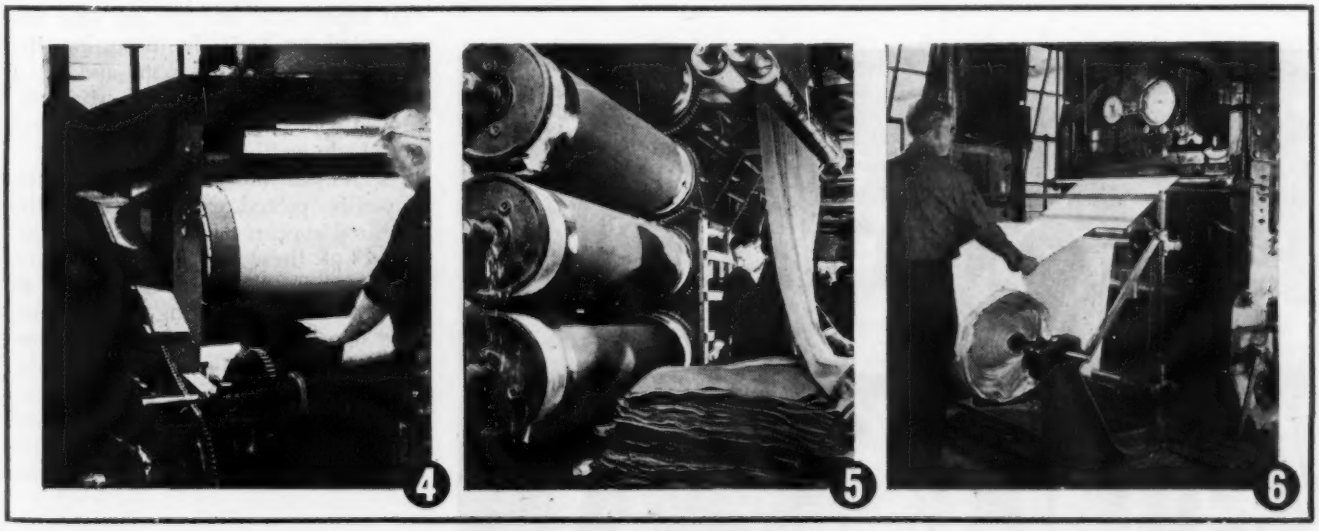


Fig. 4. In this drying tunnel, the volatile solvent is removed from the coated fabric by circulating hot air and recovered in an activated-carbon solvent recovery system for further use. After coating at the far end of the tunnel, the cloth is pulled through by the drive roll and finally wound up ready for use on the roller at lower right. **Fig. 5.** *At the end of a drying tunnel, these steam or dry cans expel all remaining traces of solvent from the impregnated cloth by surface contact. As the treated cloth comes out of the roller, it is ready for use.* **Fig. 6.** *This embossing press permits continuous operation, heat curing the thermosetting resin to a final tough rubbery condition, while at the same time the grain desired is embossed.*

Figs. 1, 4, and 6—Courtesy of Resinous Products & Chemical Co., Philadelphia, Pa.

HOSIERY MILL Studies Management Problems

HIGHLIGHTS: *Labor has opportunity to submit complaints and criticisms —Questionnaire to employees studied in effort to maintain better relations.*

By EARLE MAULDIN, *Southern Editor, TEXTILE WORLD*

WHEN AN APPLICANT for work comes to the office of one of the progressive Southern knitting mills, he is treated from the start like a human being, not merely like another hand. The employment staff plumbs his intellect, discovers why he wants to work, and, if he has a good reason, gives him their sincere cooperation in finding the place in the plant where he will fit to the best advantage.

The executives realize that it is just as important for them to make a good impression on their new employee as it is for him to impress them with his intelligence and personality.

SCREENING NEW EMPLOYEES. Perhaps he is just another hand, capable of only routine and unimportant tasks. This kind of help is needed too, and the mill tries to fit him into a niche that utilizes his limited ability and makes of him a satisfied worker. On the other hand, he may be an intelligent craftsman with highly specialized talents along some line. By carefully evaluating these endowments, the management is frequently able to redirect his talents and use him in a particular way.

An application form helps in arriving at a common discussion point. A physical examination must present evidence that there is no handicap. Eyes are examined and glasses fitted where needed. A personal interview then starts the new employee on his way to becoming proficient in his new trade.

The next step is introduction to his trainer. The mill employee chosen for this important task must possess three qualifications: experience, tact, and patience. Greatest of these three is patience. Both trainer and learner are under the periodic inspection of the foreman and superintendent, and the time required, the details, and in fact the entire training schedule are made to vary with the individual aptitudes as well as with the tasks to be performed. If it becomes apparent that no progress, or insufficient progress, is being made, the fault is not necessarily ascribed to the learner. A new beginning along another line will sometimes give satisfactory results. Regimentation has no place in this plant.

SURVEY OF WORKING CONDITIONS. A survey was conducted several months ago intended to guide the personnel department in its effort to improve relations with the help. A condensed report is given. Study of the 100 replies received after every employee had been given a blank form disclosed some surprises for the management. And the replies were not entirely agreeable.

This survey was taken seriously and the management immediately went about the task of correcting every situation which might have been the cause of irritation, of real or of fancied wrong. It is conceded that numerous insignificant and easily correctable complaints might be of paramount importance to the worker. By management these might be ignored, but by the worker they could not be overlooked. These were the first complaints to receive attention.

Then the matter of relations between worker and foreman, or immediate boss, received attention. In one department the complaint was made that supervision was too lax. This was corrected by tactfully discussing the matter with the foreman; and, as a result, the quality of the work improved, production increased, and everybody was happy!

A compilation of six of these questionnaires picked at random from the hundred appears on the opposite page. Three of these were from the first shift and three from the second; all were from the knitting department. The figures in front of the questions show how many times this particular statement or question was checked. By analyzing all of the returns, a good picture of worker's attitude toward

A group of employees of the hosiery mill are resting after a softball game. Other outside activities are sponsored by the mill management.

Sample questionnaire has been filled with returns taken from six of those turned in by employees to give typical reaction to the questions asked. Study made by mill involved analyzing over 100 such returns.

fellow-workers, management, and his job was obtained. This information is invaluable where good relations are to be maintained.

SPONSOR OF OUTSIDE ACTIVITIES. "What we are doing for our help," said the president of this mill, "is not paternalism. They earn all they receive. They are not pampered." And yet, the mill insists in providing recreational facilities and in fostering sports such as soft ball, bowling, basket ball. Uniforms are provided (in some cases the players provide their own) and equipment is arranged for so that as many as possible can participate.

Another benefit which creates a feeling of close cooperation is the practice of extending credit when an emergency arises. This is open to all employees.

Air-conditioning was considered a manufacturing necessity and a must for worker comfort. Modern lighting has been installed, as well as venetian blinds at the windows to reduce glare.

"We are convinced," said the superintendent, "that our interest in the workers' problems and in the workers themselves—not a false and hypocritical interest but a genuine friendly concern—has been beneficial to us all."

DO NOT SIGN THIS QUESTIONNAIRE

JOB Knitting 6 SHIFT 3 on First; 3 on Second

HOW I FEEL ABOUT MY JOB

1. How is the lighting which you get at your workplace?

(2) Adequate
(/) Very bad
(/) Poor
(/) Excellent for the work to be done
(/) Just barely good enough

2. How are fellow employees in your department?

(4) All right
( ) Unfriendly
( ) Cooperative
( ) Indifferent to me
(2) Very friendly

3. How do you feel about the opportunities for advancement ahead of you?

( ) I know what I want next and believe I'm going to get it
(/) I'm satisfied and don't care about greater responsibility
( ) The outlook seems bad
(2) I believe my chance will come
(/) There may be such opportunity, but I doubt it

4. How do you feel about your present job?

( ) I'd prefer something else
( ) I like it fine
( ) I just accept it - neither liking nor disliking it
(3) I don't like it
(3) All things considered, I like it pretty well

5. Are job rates in alignment within your company? (not compared with other companies)

(2) Most of the rates are fair when compared with others
( ) There are quite a few inequalities
(/) All rates are as fair as possible, compared with others
(3) There are only a few inequalities
( ) There are very many inequalities

HOW I FELL ABOUT MY IMMEDIATE BOSS

6. Does your immediate boss give you an opportunity to make suggestions?

(2) No. I've stopped trying
(2) Suggestions are encouraged and I make them occasionally
( ) Yes, but I don't believe my suggestions are really wanted
( ) He repeatedly asks us to make suggestions for improvement
(/) Generally, I don't know whether they are accepted or not

7. If you have a complaint, how is it usually handled?

(/) He passes it on to his boss, but generally nothing happens
(/) My foreman does nothing about it
(/) He listens carefully and acts on those which seem just
(2) He usually tries to talk me out of it
(/) Complaints are accepted in good spirit and investigated; a clear decision is given

8. How does your boss discipline employees who deserve it?

(2) He is quite direct but takes employees aside
(2) His criticisms are always helpful, never given in presence of others
( ) He bawls them out in front of other employees
(/) He criticizes in private and explains why
( ) He uses sarcasm in front of other employees

9. Is your boss impartial?

( ) He has a few pets who get the breaks
(2) He is strictly impartial at all times
(2) He is inconsistent. Sometimes partial, sometimes not
( ) No, he favors certain employees
(2) I believe he tries to be impartial

10. Do you believe your boss is qualified for his job?

(3) Is quite capable
(2) Lacks some necessary traits
(/) Is highly qualified
( ) Is good enough for the job
( ) Is not qualified for his job

HOW I FEEL ABOUT MY COMPANY

11. Compared with others in community, how well does your company treat its employees?

( ) Most other employers are better
(2) Our company is better than most
(/) A few of the other employers are better
(2) Our company is decidedly best of all
(/) About as well as the average employer

12. Do you feel that the management of your company:

( ) "Gets by" in handling employee relationships?
(/) Sees them primarily as workers, rather than human beings?
( ) Really understands employees and their problems?
(/) Has little genuine regard for employees?
(3) Shows a high regard for welfare of those who work for it?

13. How are desirable job vacancies usually filled in your company?

(/) By choosing the most deserving, based on ability and service
(3) By giving first chance to an employee of long service
( ) By employing people outside the company
(/) By taking the most available qualified person
( ) By promoting favored employees not especially qualified

14. When you tell your friends what company you work for, how do you feel?

( ) Not especially happy about it
(4) Proud to tell it
(2) Neutral about it
( ) Ashamed of it
( ) Glad I don't work for certain other companies

15. On the whole, is your company management capable?

(2) Pretty good
(2) Considerable room for improvement
(2) Is decidedly outstanding
( ) Is above average
( ) Is pretty dumb

SUN TEXTILE LUBRICANT . . .

Cuts Costs in Half, Reduces "Time-Out," Ends Charring Due to Excess Heat

A large textile-mill experienced trouble with the bearings of calender-rolls, because of the constant heat. They were using a well-known grease, but it melted down and charred, and the bearings did not get efficient lubrication.

A high-melting-point grease, recommended by a Sun Engineer, whom they called in, put an end to the trouble. More efficient operation resulted with fewer man-hours required for tending the rolls. After a year's operation, grease-costs had been cut in half.

Substantial savings, like this, are frequently obtained when Sun Engineers are called in. These men are trained in the lubrication of every type of textile-mill machine, and in the use of special textile-processing oils.

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CARDING QUESTIONS
Answered by Georgia Mill Men

HIGHLIGHTS: *"Meeting-By-Mail" gets information from 26 Georgia mills—Machines listed and methods discussed in the light of quality and production—Greatest difference of opinion lies in manner of stripping cards—Experience with several machine accessories given—Long-draft set-ups show surprising uniformity.*

CONSIDERABLE operating information was revealed by the answers to eleven questions on carding and eleven questions on spinning sent in by the Textile Operating Executives of Georgia in their latest "Meeting-By-Mail." This method for gathering and distributing data on mill practice and experience was resorted to by the Georgia mill men in lieu of their regular meetings in conference, to conform with the ODT request to curtail wartime transportation.

Instead of preparing a condensed report of the answers as in the past, the original remarks of the 26 mills were mimeographed in full and mailed to the members of the organization. More than 1,500,000 spindles are represented by the mills participating in the meeting-by-mail.

With the permission of the Textile Operating Executives of Georgia organization, TEXTILE WORLD has condensed the answers to the carding questions for publication here. Next month a similar condensation of the answers to the spinning questions will be presented.

OPENING AND CLEANING. Much of the information included in the replies to Question No. 1, regarding opening and cleaning machinery, is given in Table I.

Various answers were received on the effects of the machines as to curling the stock. Mill No. 3 stated that it experienced some curling in the gyrator; while Mill No. 12 found that its gyrator does not influence curling but that its No. 12 lattice cleaner does. Some curling from the Centrif-air machine and the Murray cleaner was reported by Mill No. 14. Mills No. 7, 8, 10, and 17 said they are not bothered with curling.

Several mills advanced possible conditions which will result in curling the stock. Mill No. 11 wrote, "If you allow the beater speed in the vertical opener to get too high, the stock will curl. Same is true if the beater is set too close to screen." Mill No. 4 thought that curling is caused by insufficient air draft in the machines; while Mill No. 21 stated, "Cotton dwelling in any machine too long will become rolled or curled."

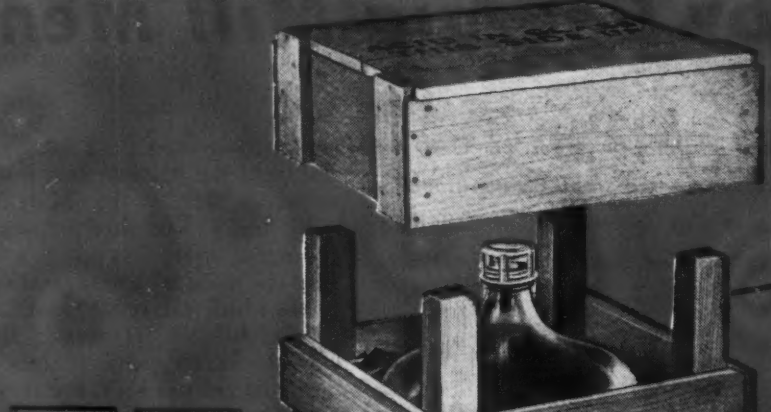
A rather complex system of opening and cleaning is used by Mill No. 23. The first arrangement of machinery consists of three bale breakers, a lattice conveyor, a blending hopper, two Centrif-air machines, and a condenser. The cotton is delivered from the condenser to bins, and from these bins the loose stock is transferred by hand to the lattice conveyor which leads to a hopper. The second machine arrangement consists of this hopper, a Buckley opener, and a condenser. When processing cotton longer than 1 1/16 in., the

Table I—Compiled from mill replies, this table gives the kind and number of machines used but does not show their sequence.

Mill No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Blending hopper	5	8	x			7				x	x	7		6			x	5		x	x		2	x	6
Bale breaker					1	1		1		2		1					1	1				1	3		1
Feed table														2										1	
Condenser	4		1				1													1			2	6	
Buckley beater	2					2	1	1		1													1	2	
Centrif-air	1			2		1	1							2			1	1		1	1	1	2		
Superior cleaner		1	1	1				1			1										1	1			
Vertical opener		1			2						1	1		2										1	1
#12 Lattice cleaner		1			2						1	1		2										1	1
Buckley spirawhirl			2																						
Cage section			2																						
24" Downstroke			1																						
Gyrator			2			1				2	x	x						1							
Porcupine beater				1																1					
Cleaning trunk							1											1							
Whitin upstroke										2															
Lummus mixer												1										1			
Murray cleaner														2											
Staple length (in.)		1 1/16	1		7/8–1 1/16	Osnaburg	1 1/16–1 3/16	1 1/16		1	1 1/16			1–1 1/16			7/8–1 1/16			1 1/32		7/8–1 1/16	7/8–1 1/16		1 1/16
Lb. per hr. (100)	15–18	15			7	12	5	7.5		18.3	8	10		40			7.5			3.7	14	8	11–13	15.5	12

Note: x represents mills which reported the use of a machine but did not give the number they have in operation.

General Chemical INTRODUCES



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Compact . . . saves labor . . . lower gross weights make possible *one-man* handling and storage—

	Gross
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Nitric Acid	113 lbs.
Hydrochloric Acid	102 lbs.
Ammonium Hydroxide	86 lbs.

✓ **"PURITY SEAL" COVER**
Completely encloses bottle, keeps out dirt, prevents sunlight damage to pure acids.

✓ **POUR-CLEAN LIP**
Superior pouring control . . . easier emptying into small containers.

✓ **SCREW-CAP CLOSURE**
Added security in sealing, yet simpler opening and closing. Keeps bottle neck clean, protects acid from contamination.

✓ **SAVES STORAGE SPACE**
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Table II—Types of picker beaters being used and the speeds at which they are run.

Table does not reveal beater sequence in all cases.

Mill No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
3-Blade	x	....	7.5	9.5	.....	5.9	5	.....	10.5	5.7	11.6	6.5	8.5 7.65 3.65	.....	.....	9	10.75	....	9.4*	5.1	7.50 5.45	5.1 5.1	9.4 8.9	6.9	11.25	12.6
2-Blade	x	12.8	12	....	12 12	9.7	10	12.1	....	12.25	.....	.....	.....	12 12	12.6 12.6	14	.....	12.5 12.5 12.5	12.5	10.3	12.5	.....	.....	9.75	12.4	....
Spike	....	....	....	....	.....	.....	.....	10.25	....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
Kirschner	x	12.5	10	11.5	9	9.6	.....	13.3	10.5 11	10.25	10 9.6	x 13	10.8 11.8	14	9.4	9	10.5 10.5	....	10.7	10.7	9.42	10.7	4.8 8	10	12.4	10 10
Lap wt.	....	13.5	14	....	13.75	14	14	14	16	14	....	14	15	14.67	16	....	.....	14.7	18	.....	14	14.5	.....	.....	14	14
Production	....	3	4	....	2.1	4	3.25	3.5	4.4	2.4	....	3.83	3.05	4.2	4.5	....	.....	3.5	3.65	3.69	7.5	3.5	3.6	.....	3.75	2.7

Note: Beater speed is given 100 r.p.m., lap weight in oz., and production in 100 lb. per hr. The symbol x indicates that the beater speed was not reported. A double entry under one type of beater signifies that the mill has two beaters of that type.

** Aldrich beater*

mill experiences a slight curling of the stock; and it eliminates this by by-passing the Centrif-air machines.

In commenting upon the relative merits of the various machines, a few mills expressed preferences. Mills No. 3 and 21 like the Superior cleaner. Mill No. 10 gets its best cleaning on a Whitin bale breaker followed by a Whitin upstroke cleaner. No. 11 thinks that machines which do horizontal cleaning are not as apt to curl the stock as machines which do vertical cleaning. Mill No. 20 is satisfied with the set-up it has at present.

Questioned as to what changes they would like to make when circumstances permit, Mill No. 1 wishes a Superior cleaner to replace a Buckley beater, and No. 11 wants a Superior instead of their present vertical cleaner. Mills No. 2 and 22 would like another condenser for removing dust. Need for another cage section is expressed by Mill No. 3. No. 12 plans to substitute its present hopper feeders with F-7 cleaning and blending feeders; while Nos. 14 and 21 state that they need more blending feeders.

PICKER BEATERS. The second question related to the type of beaters being used on pickers. Table II lists the different kinds of beaters and the speeds at which various mills are running them. Mills No. 9 and 16 state that they prefer blade beaters at the back of the pickers because of the heavier cleaning job which must be done there, and Kirschner beaters on the front of the picker because they do finer cleaning and yield a more uniform lap. Mill No. 12 uses one Buckley and two Kirschner beaters and says that this arrangement aids in lap uniformity.

Mill No. 20 uses a Buckley beater on the back, but varies the speed with the staple length of the cotton being processed. When running 15/16-in. cotton, the beater is operated at a speed of 520 r.p.m.; but when running 1 3/32-in. cotton, the speed is increased to 1,020 r.p.m. This beater and these two operating speeds are not included in Table II.

Very little difference in picking was noticed by Mill No. 24 when it experimented with running a Kirschner beater in the middle section of the picker instead of the two-blade beater shown in the table.

The first part of the third question, "Which method of card stripping do you prefer—vacuum, hand, or continuous?" was answered by each of the 26 mills. The replies revealed that two of the mills are using the continuous-stripping method, 14 are using the vacuum method, and 10 are stripping by hand. One mill, No. 8, stated that it is using the stripping brush but prefers the vacuum method.

FACTS ABOUT STRIPPING. Although there was considerable difference of opinion as to the merits of the three stripping systems, the replies indicated that there are a few definite facts now accepted in regard to card stripping:

1. Mills which have tried vacuum or continuous stripping prefer either method to hand stripping.
2. Mills using the vacuum method find it desirable to strip with a brush at various intervals.
3. Both vacuum and continuous methods result in a saving of labor.
4. Either of these two methods results in less dust and card waste, and a more uniform sliver.
5. The interval between grindings in most cases remains unchanged when the method of stripping is changed.

In discussing the grinding schedule, Mill No. 1, using the continuous stripper, stated, "We believe that we are going to be able to materially extend the grinding cycle;" while Mill No. 2, using the vacuum method, said, "It saves a little on card grinding."

Five of the mills reporting are either experimenting with or changing over to continuous strippers. One of them, No. 14, lists the following advantages:

1. Decrease in waste and labor.
2. Better carding as a result of the cylinder not loading.
3. More even card sliver.
4. Increased production.

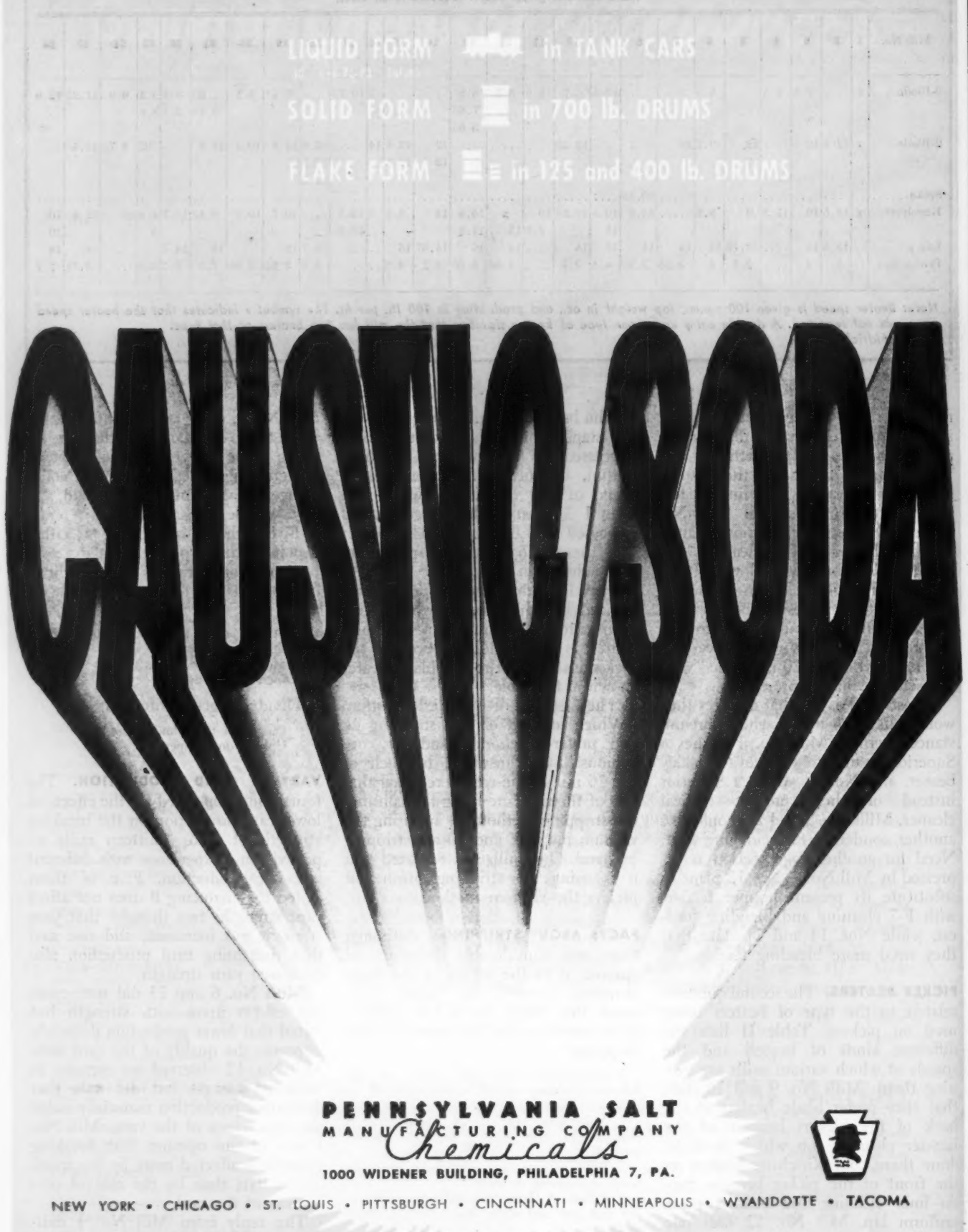
Disadvantages pointed out are:

1. Dulling of the cylinder wire.
2. Upkeep on stripper.

VARYING CARD PRODUCTION. The fourth question asked for the effects of lower card production on the breaking strength of yarn. Thirteen mills reported some experience with different rates of production. Five of them stated that reducing it does not affect yarn strength; two thought that yarn strength was increased; and one said that decreasing card production also decreased yarn strength.

Mills No. 6 and 23 did not report any effects upon yarn strength but stated that lower production definitely improves the quality of the card web. Mill No. 12 observed no increase in breaking strength but did note that decreasing production materially aided the appearance of the yarn. Mill No. 1 was of the opinion that breaking strength is affected more by the speed of the flats than by the rate of production of the card.

The reply from Mill No. 4 indicated rather wide experimentation with card production and stock. It stated, "Slower card production will affect the breaking strength for the



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better, if the stock is dirty and full of short fibers. On the other hand, if the stock is of fair length and fairly even staple, with full body and not too trashy, the tendency is in the other direction."

CARD DRAFT. Asked for an opinion as to why a draft of approximately 100 on cards is usually accepted as correct, 17 mills replied. Two of them thought that the draft is accepted because it is traditional, and two thought that it is accepted because the machine was designed for that capacity. Five of the mills stated that a card draft of 100 is correct because it fits well into the drafting and weight organization of the preceding and following processes.

Mill No. 18 is of the opinion that a 100 draft is best for staple lengths up to 1¼ in. but that longer staple should be drafted from 110 to 130. No. 19 cards 17 lb. per hr. from an 18-oz. lap, and says that it gets better cleaning and a better-looking web when drafting about 135.

Table III shows the results of rather extensive tests made by Mill No. 14. When drafting 220, it ran a double lap on the card.

BALL BEARINGS. Question No. 6 related to the use of ball bearings on lickerins and comb boxes, and bottle oilers on cylinder, doffer, and lickerin shafts. The replies indicated that mills in general do not favor the use of ball bearings or bottle oilers at these points. However, Mill No. 14 stated that it has been using ball bearings on lickerins for approximately 15 years with very satisfactory results. Of six mills reporting experience with the bearings on comb boxes, three said that performance was satisfactory, one thought it was fair, and two found it unsatisfactory. The replies showed that three mills had used bottle oilers on cylinder, doffer, or lickerin shafts. Mill No. 6 reported good results; No. 15 stated that the operators broke the bottles too often; and No. 26 was satisfied in every respect.

The seventh question asked for experience with composition endless belts for driving lickerins and comb boxes. Six mills liked the endless belts, while four found them unsatisfactory. Mills No. 18 and 23 preferred them for comb boxes. Mill No. 10 stated, "We have been running some 4-ply canvas lickerin belts impregnated with rubber for seven months and like them very much." No. 21 also liked rubber-fabric endless belts for the lickerin.

LONG DRAFT. In regard to the machine layout for drawing, roving, and spinning, five mills replied that they use one-process drawing, one-process roving, and single-creel spinning. Six other mills use two-process drawing, one-process roving, and single-creel spinning. Mill No. 2 prefers single-process drawing, double-process roving, and double-creel spinning; while No. 3 uses one-process drawing, three-process roving, and double-creel spinning. Mill No. 10 finds it desirable to put its stock through two processes of drawing, one process of roving, and to creel double in spinning. No. 20, 21, and 23 did not give their roving and spinning layouts but stated that they prefer two-process drawing.

Creeling long-draft frames at doff time is preferred by 13 mills.

Mill No. 4 reported that after extensive testing it was convinced that two-process drawing gives it 10% greater yarn breaking strength than did single-process drawing. No. 14 found that "better end-to-end variation is obtained when running single-process drawing, but more even yard-to-yard sliver is obtained from two-process drawing." The results of 100 tests made by Mill No. 23 revealed that breaker drawing had a 9.4% variation against 3.55% for finisher drawing.

The ninth question asked for the advantages of revolving top clearers on drawing and fly frames. Two mills stated that they prefer them for both drawing and roving because such clearers permit less waste to get into the work. Three mills using the revolving clearers only on drawing said that they prevent waste and dust accumulation. Mill No. 18 found them satisfactory on fly frames with synthetic roll coverings, while Mill No. 6 stated that revolving clearers on fly frames often catch an end when it comes down.

CREELING LONG-DRAFT. In reply to the question as to the best way of creeling a long-draft frame, 10 mills stated that they prefer to creel on a full doff, three on an empty doff, and five while the frame is running.

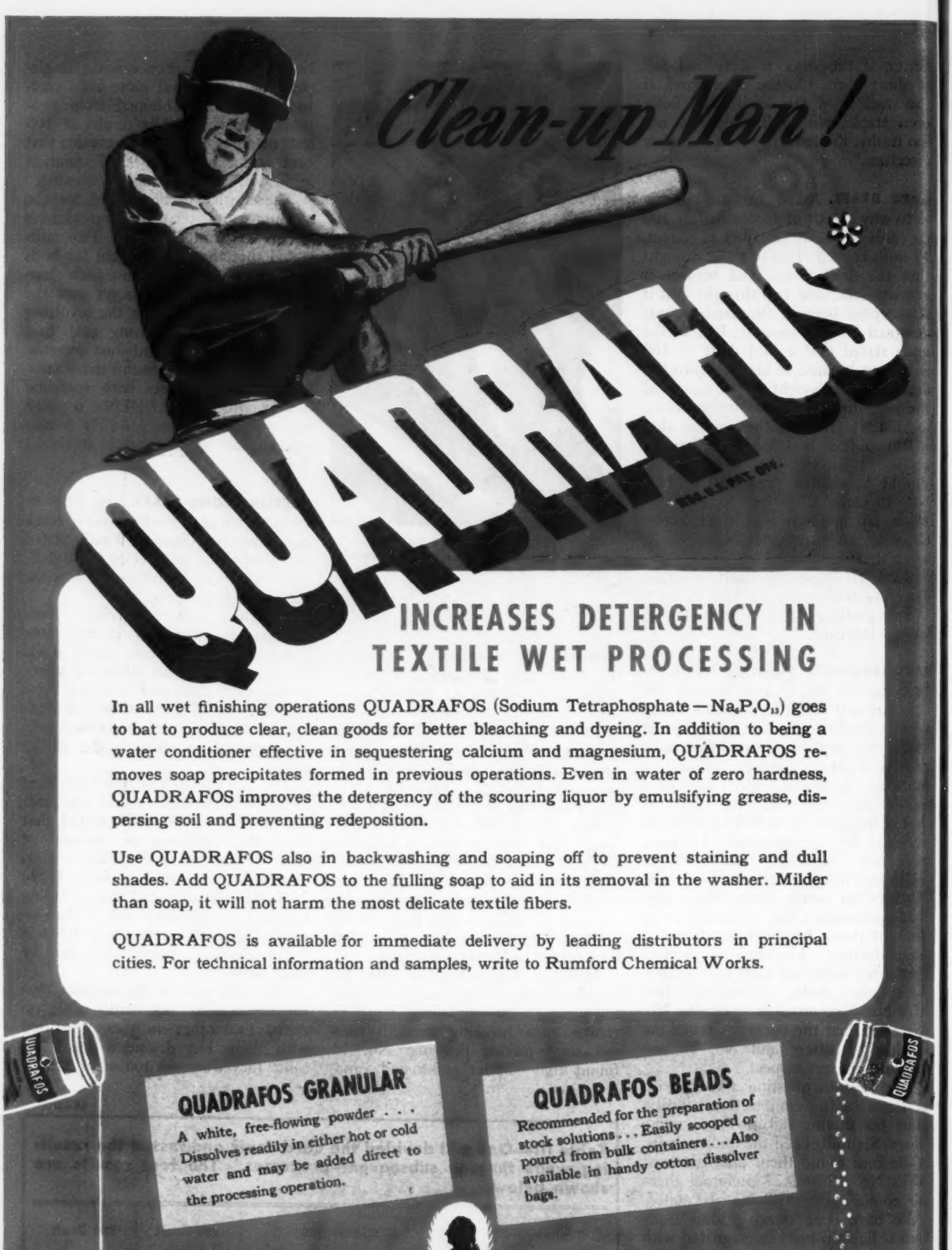
Sixteen mills specified their methods for disposing of the piece cans of drawing sliver made while creeling. All of them splice the pieces to make full cans, and reprocess these pieced-up cans. Eight mills run them back through the drawing frame, and eight run them through the roving frame.

The last question related to the use of high-compression rollers on cards and drawing. Four mills stated that the rollers increased the amount of sliver in the can, and six other mills quoted increases ranging from 11 to 25%. Mill No. 7 stated that installing the high-compression rollers plus reworking the trumpets has enabled it to increase the pounds per can by some 40%.

One mill was of the opinion that the rollers were not worth while on cards. Two other mills experimented with them but discarded them because they wore out too many gears.

Table III—One mill doubled the card draft and tested the resulting webs through subsequent processes. The test results are shown below.

	110 Draft	220 Draft
Card sliver (%variation)	15.38	18.53
Drawing sliver (% variation)	5.41	4.68
Slubber roving (% variation)	5.90	5.01
Yarn size (avg.)	8.96	10.15
Cloth breaking strength (lb.)	51	54



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TENSION IN SLASHING
Controlled Electrically

HIGHLIGHTS: *Modern electric motor winder drive of constant-current type provides stepless control of tension in winding and in beaming operations—Friction clutches, slip-belts, and other frictional methods formerly used for tension controls eliminated—Control may be applied to existing slashers.*

By R. B. MOORE
Textile Application Engineer
Industrial Engineering Div.
General Electric Co.

IN ALMOST EVERY TEXTILE MILL and finishing plant there are several operations which involve the winding of yarn or cloth on cylindrical cores to form beams or rolls. Each of these operations presents its own individual problems, but there is usually the ever-present need for accurate, continuous control of tension. Failure to obtain proper tension control can and does cause damage to the textiles, resulting in seconds and decreased profits.

A type of electric motor winder drive has been developed possessing features that can be briefly summarized as follows:

1. Eliminates friction clutches, slip-belts, line shafting, etc.
2. No mechanical attachments to wear out. Low maintenance costs.
3. Continuous regulation and indication of tension.
4. Eliminates "human error."
5. Smooth, positive, stepless control of speed—no jumps or jerks.
6. Easy duplication of previous values of tension.

SLASHER DRIVE. The beamer on an ordinary cotton slasher offers a typical example of an operation requiring dependable, accurate tension control.

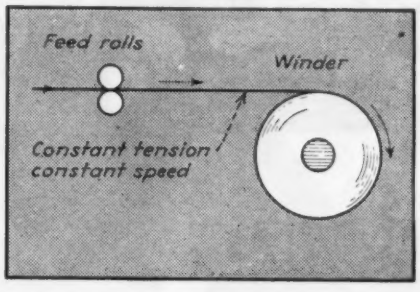
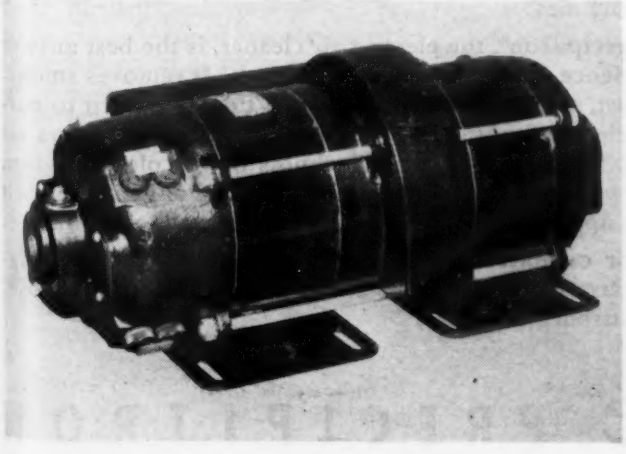


Fig. 1. Simple center-wind type of constant winder.

Requirements of the slasher beamer drive are easily and completely fulfilled by separate electric motor drive and suitable control without any auxiliary mechanical equipment. The beamer requires its own individual driving motor while the rest of the slasher is driven by one or more additional motors. Speed of the beam is coordinated with the rest of the slasher, but the operator has a separate control, independent of speed, for setting and adjusting the beaming tension. This type of slasher drive is being applied on both old and new slashers.

THEORY OF WINDER DRIVE. The term "center-wind" is used in contrast to "surface driven" winders. This article deals only with the center-wind type of reel.

Fig. 1 illustrates a simple winder with the material being fed to the reel at a given rate of speed from a set of feed rolls. Since the material is coming from the feed rolls at a constant rate of speed, it is obvious that the speed of rotation of the winder must decrease as the diameter of the reel increases in order that the surface speed of the reel may always be the same as the speed of the material. On a reel with changing diameter, the speed of rotation must be inversely proportional to the diameter to give constant surface speed. Also, as-



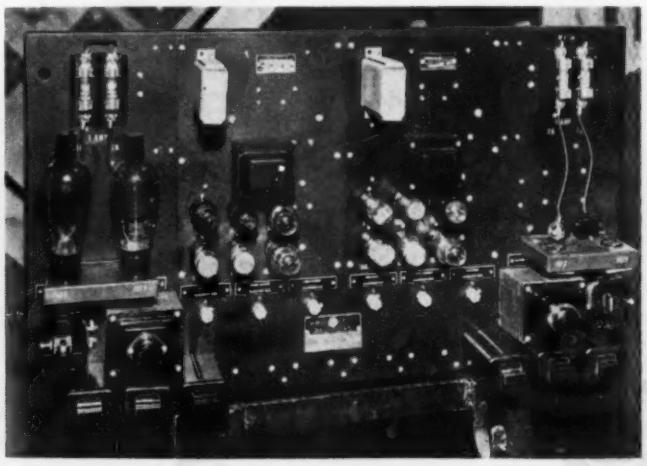


Fig. 2. Regulators of high amplification for controlling current. (Left) Amplidyne motor-generator uses a rotating exciter for regulation. (Right) Electronic equipment such as shown may be used in place of amplidyne set for field-control regulation.

TESTS PROVE EFFICIENCY

The Blackness Test was developed to furnish a more precise measurement of Precipitron's greater efficiency compared to mechanical filters. It provides greater accuracy and approximates actual particle count.

The results of a typical test, shown here, indicate clearly what Precipitron can do. Here are actual photographs of a test ... where 2,500 cubic feet of air in each instance, was drawn through a cloth area for a 60 minute period. They tell a graphic story.

Uncleaned Air

Mechanically Cleaned Air

Precipitron Cleaned Air

Dirt is a handicap—on the open road as well as in the textile mill. It slows production and is a costly encumbrance which no mill can afford today.

More and more mills are coming to recognize this fact ... more and more mills are conducting housekeeping contests. The banner shown in the above picture, together with a badge worn by each employee, are rewards for the cleanest housekeeping job in the mill. Much has been accomplished in this effort to fight dirt.

But manual cleaning never can be fully effective. Textile machines agitate dirt with every revolution. They always will agitate dirt and dirt always will exact its toll—unless it is removed from the air *before* it can settle on the machines.

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suming that the material is to be wound on the reel with constant tension, the torque on the winder will increase in direct proportion with diameter increase.

With constant tension and constant linear speed of material, it can be proved that the product of reel *r.p.m. x torque* is a constant as the reel builds up. Since we know that power is proportional to the product of r.p.m. x torque, it becomes evident that the winding power is constant. This same conclusion can be reached more directly, since the winding power is known to be proportional to the product of tension times linear speed of material, each of which has been assumed constant at the beginning.

It appears that a motor with a constant horsepower characteristic should be ideally suited for constant tension winders. This is true. The direct-current, adjustable-speed motor is well adapted to this application. Such a motor on a winder application must have a constant horsepower speed range equal to, or greater than, the speed range of the reel diameter build-up.

Consider the well known motor equation:

$V = Ea + IaRa$,
where
V = applied voltage
Ea = generated voltage in the armature
Ia = armature current
Ra = armature resistance

It is known that the power delivered to a load by a motor is proportional to the product of $EaIa$ minus the losses caused by friction and windage. For a given applied voltage V and armature resistance Ra, Ea will be constant. If Ia can be held constant, power delivered by the motor will be essentially constant. This is exactly what is done by, and is the underlying principle of, the constant tension winder drive. Tension can be increased or decreased by changing the motor armature current. Similarly, the speed of reel rotation can be changed to accommodate changes in speed of material by altering the applied voltage.

Obviously, the increase of tension and/or winding speed will result in a higher power level, but the constant power relationship is maintained over the entire diameter range. This is illustrated by the family of constant horsepower curves shown in Fig. 3 for a reel with a 4-to-1 diameter build-up. With curve A as a reference, curve B will be obtained with double tension, and curve C will result from doubled winding speed. Curve D is the result of doubled tension and doubled speed.

Two features of this type of winder drive are: First, tension control and speed control are entirely independent functions, permitting ready change of one without affecting the other. Second, an ammeter measuring the motor current gives a direct, reliable indication of tension, and this is independent of an operator's judgment. Thus, accurate records of tension may be kept, and values of tension found to give best results can be accurately duplicated day in and day out.

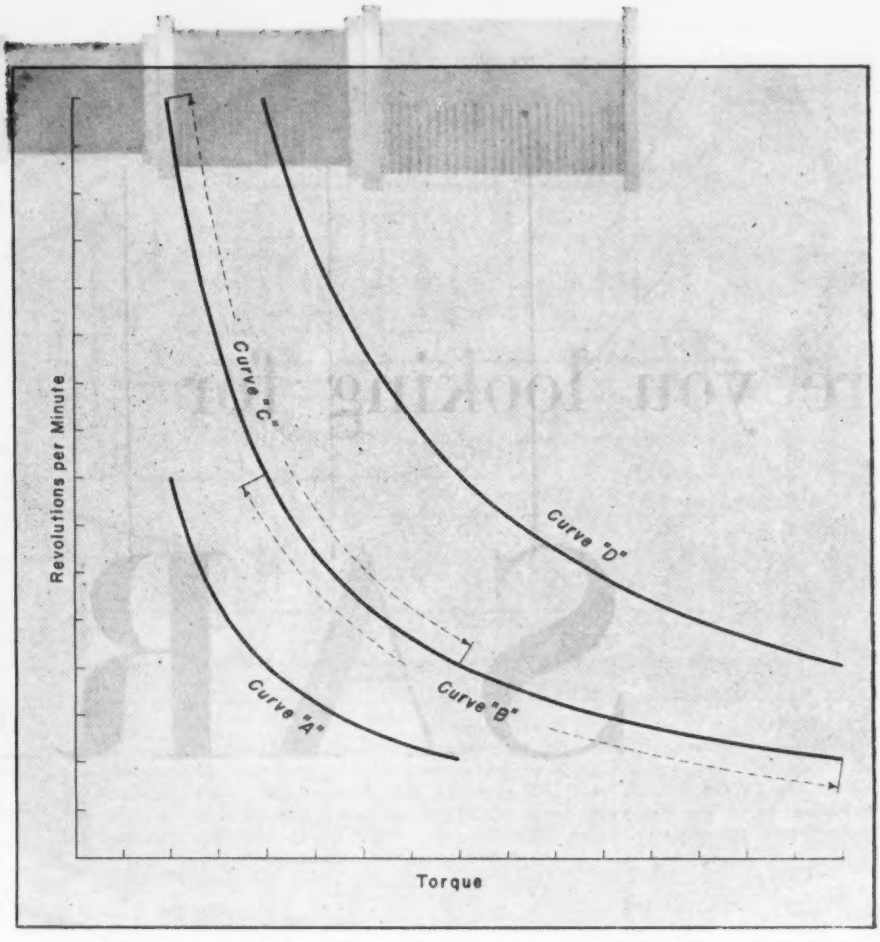


Fig. 3. Constant horsepower winder curves for a reel with a 4-to-1 diameter build-up.

HOW CURRENT IS REGULATED. It was stated that constant tension was obtained by holding motor armature current constant as the reel diameter built up. A question asked is, "How can this be accomplished without auxiliary mechanical equipment to indicate diameter or tension change?"

The answer is relatively simple.

One common method involves the use of a resistor in series with the

(*Continued on page 186*)

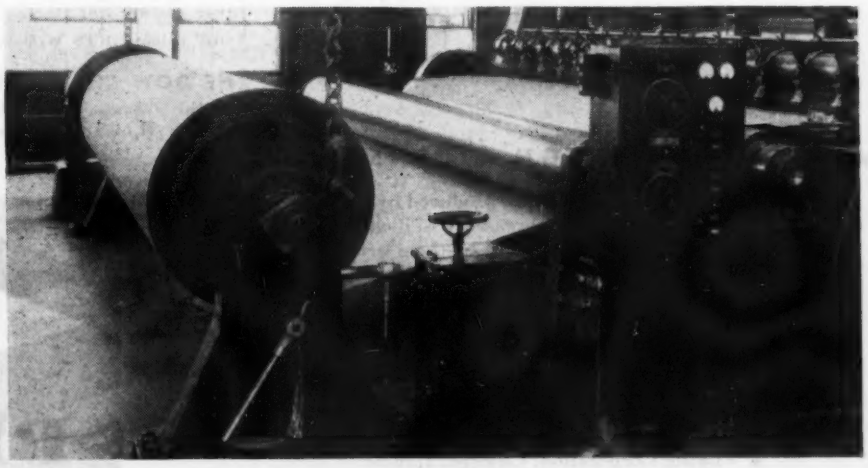
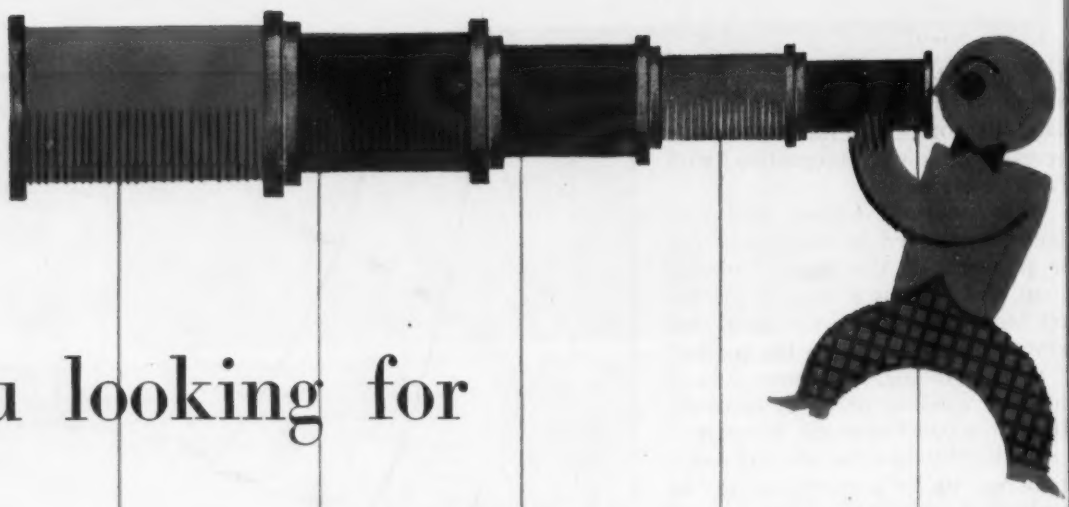


Fig. 4. Operator's control panel on a G-E adjustable-voltage winder drive of a type which may be used for controlling winding tension on beams.



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- ★ Hodgman Rubber Company, Framingham, Mass.
- ★ Irvington Varnish & Insulator Co., Irvington, N. J
- ★ National Plastics Products Co., Odenton, Md.
- ★ Visking Corporation, Chicago, Illinois (merchandised under the name Permasan)
- ★ Western Felt Works, Chicago, Illinois

DOW PLASTICS

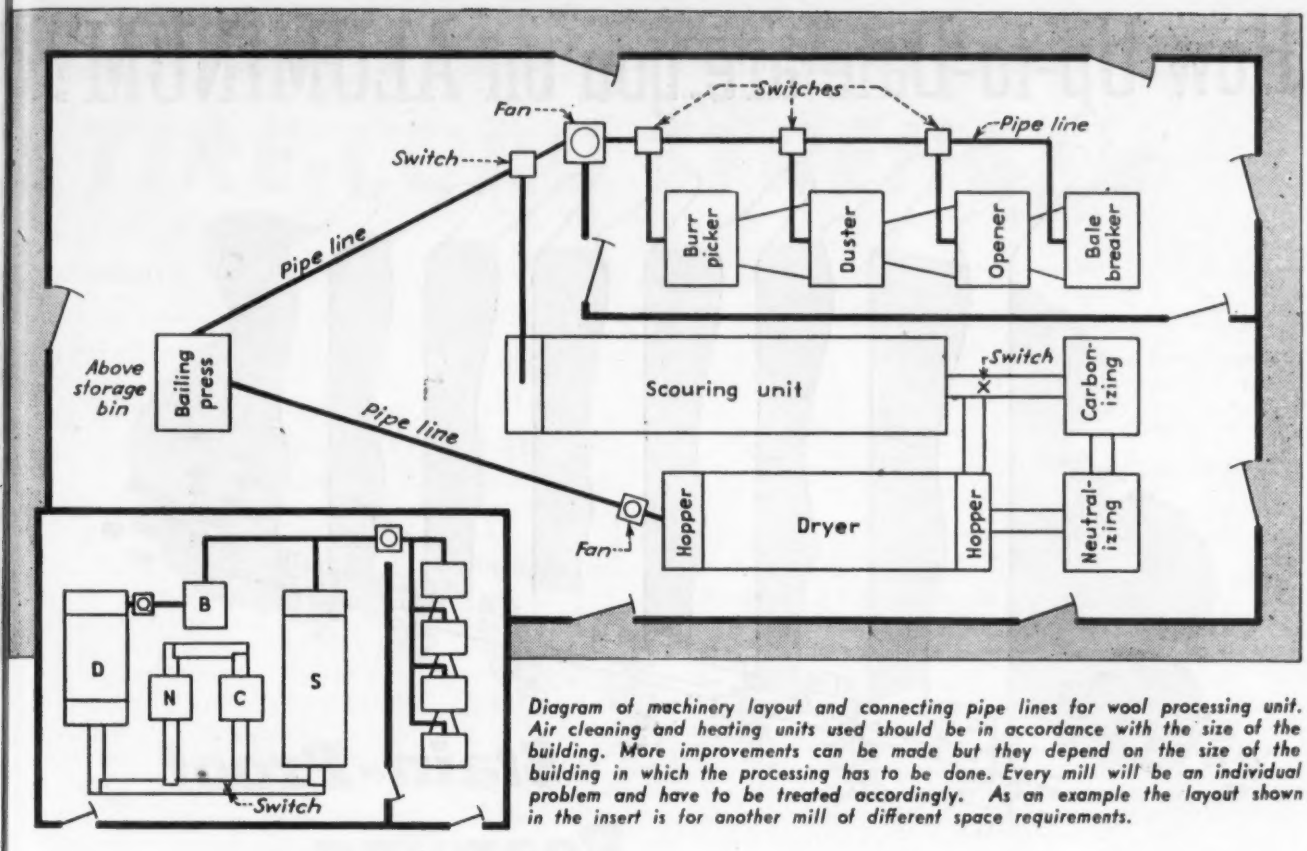

Diagram of machinery layout and connecting pipe lines for wool processing unit. Air cleaning and heating units used should be in accordance with the size of the building. More improvements can be made but they depend on the size of the building in which the processing has to be done. Every mill will be an individual problem and have to be treated accordingly. As an example the layout shown in the insert is for another mill of different space requirements.

Relocating for CONTINUOUS PROCESSING In Woolen Yarn Mills

HIGHLIGHTS: *Addition of pneumatic pipe lines and aprons permits relocation of machinery for continuous processing in opening and scouring—Four workers and foreman can handle operation of entire unit.*

By GUSTAV ZELLNIK
Consulting Textile Engineer
Newburgh, N. Y.

MODERNIZATION not only involves the buying of new machinery but it also involves the relocation and the layout of the machinery, both old and new, to make an efficient unit for the continuous flow of production from one department to another. The suggested layout for the opening and scouring room in a woolen mill has been given as a means for obtaining better control over the wool and fibers being handled, for assembling a continuous processing unit, and for reducing the amount of labor required in handling these operations.

RELOCATION OF MACHINERY. The layout shown in the accompanying drawing forms a continuous processing unit through opening, scouring, and raw-stock carbonizing if desired. Two different methods of handling the wool are used, namely by pneumatic means and by aprons.

A bale breaker, opener, and duster are connected in line. If burr picking is required in the mill, a picker is also placed in sequence after the duster. A sheet-metal pipe line runs from each of these machines and by means of switches the production from each may be diverted into the pipe line and blown to a storage bin above the bale press, or, if desired, to the feed box of the scouring unit. Thus wool may be run through all four of these processing operations or through only a number of them.

From the feed box of the scouring unit the wool passes through bowls and then may be carried on an apron to the hopper of the dryer. If desired, and if the mill carbonizes its raw stock, the wool may be carried to a carbonizing unit and thence to a neutralizing unit before it passes to the dryer. After leaving the dryer, the stock is blown to the storage bin above the baling press.

It is advisable to have the warehouse divided into two parts. One part should have stocks on which preparatory work has yet to be done, while the other part should contain stocks ready for consumption by the other processing departments of the mill. When constructing the unit, as shown, it is advisable to have a wall

(Continued on page 184)

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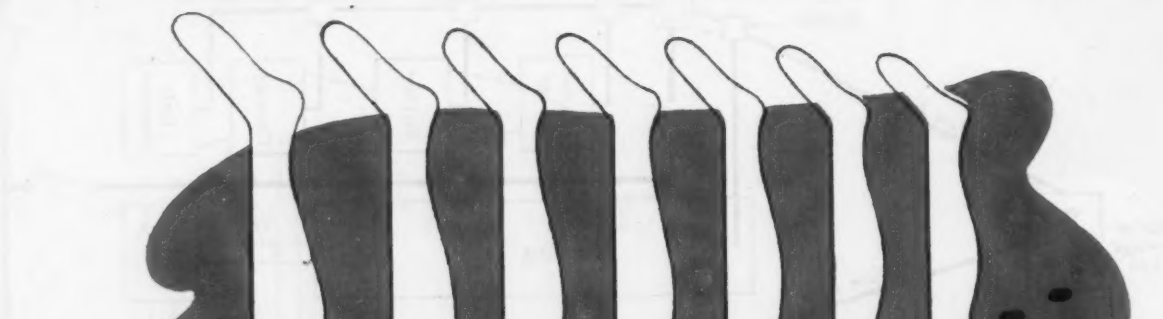

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Six Fiber Properties Determine TIRE-CORD STRENGTH

HIGHLIGHTS: *Relation of fiber properties to tire-cord strength and elongation established—Tests made on 754 cottons—Fiber length in itself does not affect cord strength.*

By ROBERT W. WEBB and HOWARD B. RICHARDSON

THE COTTON-FIBER PROPERTIES which contribute to tire-cord strength have been found to rank in order of importance as follows: fiber strength, coefficient of length variability, grade of cotton, fiber fineness, percentage of mature fibers, and upper-quartile length. These findings were made in comprehensive studies of the relationships and contributions of a number of cotton-fiber properties, separately and in various combinations, to the strength and elongation of 23/5/3 carded tire cord. The results represent 754 case-historied American upland cottons covering a wide range of growth conditions and fiber properties.

The contribution of the percentage of mature fibers and of upper quartile length to tire-cord strength is statistically insignificant. When an increase in tire-cord strength accompanies an increase in fiber length, as frequently is the case, it is due to an associated increase in fiber fineness or fiber strength, or both, rather than to the increase in fiber length itself.

CLASSER'S LENGTH. As a practical matter, therefore, fiber length as determined by laboratory methods or staple length as designated by the classer provides a useful basis for the selection of cottons for tire cord and other uses due to the fact that other fiber properties, such as fiber fineness and tensile strength, are generally associated with fiber length. Staple length designations assume importance, moreover, in that they serve as an essential basis for the selection of cottons to meet the requirements of specific roll settings and drafts in manufacturing organizations.

Authors' abstract of a preliminary report upon the Relationships of Cotton Properties to Strength and Elongation of Tire Cord, by the Cotton and Fiber Branch, Office of Marketing Services, U. S. Dept. of Agriculture, War Food Administration. Copies of the full report can be obtained by writing to the foregoing at Washington 25, D. C.

A coefficient of multiple linear correlation of 0.920 has been found for the relationship existing between the strength of the tire cord and the six collective fiber properties. This is relatively high, 84.6% of the total variance in the tire-cord strength of these cottons being accounted for by the fiber properties considered.

Twenty-three regression equations have been developed from which estimated strength of 23/5/3 tire cord may be predicted on the basis of one or more fiber properties. The precision of each of these equations is reported, together with the coefficients of correlation and determination. Essentially as high a correlation has been found for the relationship between the tire-cord strength and fiber strength, fineness, coefficient of length variability, and grade as was obtained with the six fiber properties.

Only two of the fiber properties have been found to affect significantly tire-cord elongation at the 10-lb. load. Ranked in order of importance, they are fiber strength and fiber fineness. Four fiber properties significantly affect tire-cord elongation at the point of rupture. Listed in order of importance, they are fiber strength, fiber fineness, coefficient of length variability, and grade.

Each increase of 1% in tire-cord elongation at the 10-lb. load is associated with a reduction of 0.58 lb. in tire-cord strength; and each increase of 1% in the tire-cord elongation at the point of rupture is associated with an increase of only 0.08 lb. in tire-cord strength.

In the light of the findings obtained, it would appear that tire-cord elongation is due to one or more fiber properties not considered in these analyses—as fiber elongation and elasticity—or that elongation is more a function of the construction of tire cord than of fiber properties.

TABLE I

An increase of 1 lb. in the strength of 23/5/3 tire cord results from each of the following:

(1) Raising the grade of cotton 3¼ grades

(2) Decreasing coefficient of length variability 4.42%

(3) Decreasing fiber weight per inch 1.32 micrograms (the finer the fiber, the stronger the cord)

(4) Increasing fiber strength 5,600 lb. per sq.in.

TABLE II

An increase of 1% in tire-cord elongation at the 10-lb. load results from each of the following:

(1) Decreasing fiber weight per inch 0.93 micrograms

(2) Decreasing fiber strength 8,470 lb. per sq. in.

ELONGATION AND STRENGTH. A small but significant negative relationship occurred between the strength of this tire cord and the percentage of elongation at the 10-lb. load. An insignificant positive relationship, however, appeared between tire-cord strength and elongation at the point of rupture. A fairly high positive relationship exists between the two elongation measures, the coefficient of simple correlation being +0.871.

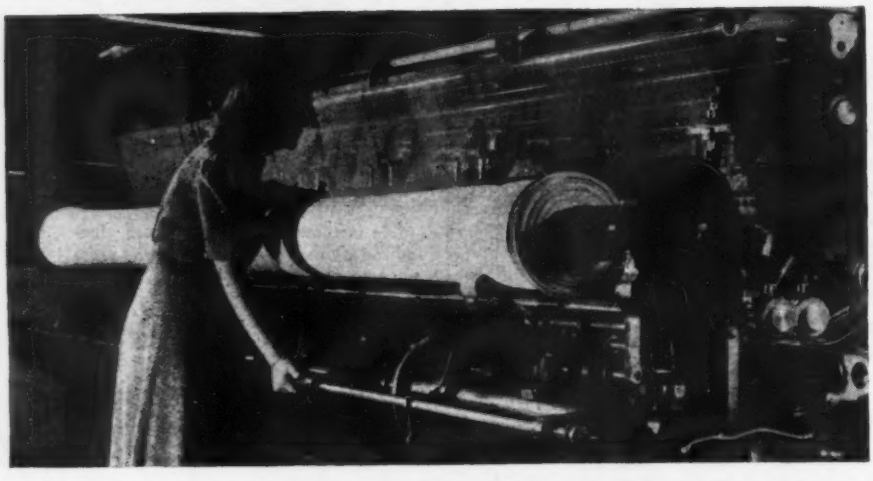
A relatively high positive correlation exists between tire-cord strength and the skein strength of 23s single carded yarn spun with optimum twist multipliers. The coefficient of correlation is + 0.897, and 80% of the variance in the tire-cord strength is explained by yarn strength. An equation is given whereby the strength of 23/5/3 tire cord may be predicted from a knowledge of the skein strength of 23s single yarn.

In considering the equations, statistical values, and conclusions presented in this paper, it should be understood that they refer only to one construction of tire cord, namely 23/5/3, and only to American upland cottons. What the results would be from similar analyses with other constructions of tire cord, of which there are many varied and specialized types, or with other growths of cotton, is problematical.

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. AUGUST, 1945

RESEARCH DEPARTMENT USES MILL-SIZE MACHINERY FOR TEXTILE STUDIES



The Textile Research Department of the American Viscose Corporation, at Marcus Hook, Pa., is uniquely equipped for the study of rayon textile production. It contains full-size commercial machinery that duplicates much of the equipment used throughout the textile industry for the handling of rayon, from raw stock to finished yarns or fabrics. The tricot knitting machine shown here is typical of the equipment with which the Department works. This machine knits fabric in finished widths up to 108 inches.

"CROWN" TESTED TAGS TO 446 ACCOUNTS IN MONTH

A measure of the follow-through involved in the release of CROWN Tested identification to garment manufacturers receiving CROWN Tested fabrics may be seen from the fact that 446 accounts received identification tags in a single month. Most of these accounts require personal contact. Those who haven't heretofore received CROWN Tested fabrics sign the Tag Agreement, under which they agree to use such identification only on garments made from CROWN Tested fabrics.

In addition, information on the type of merchandise they intend to make from these fabrics is obtained, including the number of yards required for each garment. In most cases, a sample garment is examined for style and workmanship and becomes a possibility for inclusion in CROWN Tested merchandise advertising. Another significant point is that calls on these manufacturers must be made immediately; under today's conditions, fabrics are received and garments are cut and shipped within a very short space of time.

INFORMATION PROGRAM ON RAYON TIRE CORDS

In a current series of special advertisements, the American Viscose Corporation is presenting impartial information on the performance of heavy duty tires made with rayon cord. The advertisements are appearing in the following magazines: *Bus Transportation, Commercial Car Journal, Tire Review, India Rubber World, Rubber Age.*

"RAYON" MAGAZINE HELPS SAVE 8000 KILOS OF YARN

The magazine, *Rayon*, published in Spanish by the American Viscose Corporation for distribution throughout Latin America, is finding an interested audience among users of rayon in this area. An indication of its value is found in this typical case. One company, which was having trouble sizing acetate yarn, followed suggestions on this problem made in a *Rayon* article. As a result, they were able to size and weave 8,000 kilos of yarn which they had laid aside as beyond possible use.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon yarns and staple fibers

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRICS

*Reg. U. S. Pat. Off.

CONTROLLED ATMOSPHERE
Ups Tire-Cord Production

HIGHLIGHTS: *Aldora Mills now have working conditions that are more comfortable in hot summer months—Production increased by 5% with installation of evaporative cooling system.*

By WILLIAM E. VECSEY, *Plant Manager, Aldora Mills*

FACTORS WHICH GOVERN the utilization of man-made atmospheric conditions in the general run of textile plants are subject to modification in a mill such as the Aldora Mills, Division of General Tire & Rubber Co., Barnesville, Ga., which makes cotton and rayon tire cord. For instance, in a sheeting mill, it is necessary to maintain a high relative humidity in the weave room in order to secure maximum production. In a tire-cord plant where the ends are twisted and set, a lower relative humidity is desirable, about 60% as against 75% in a sheeting mill.

Furthermore, it is not desirable to ship tire cord that has more than 5 to 5½% regain because of manufacturing conditions at the tire plant where regain must be brought down to 2½%. However, humidity is important in the spinning and twisting departments of a tire-cord mill, and a certain amount of cooling is desirable throughout the plant to provide comfort for employees.

CONDITIONING SYSTEM INSTALLED. When a new system of air conditioning was proposed along with other suggestions intended to make the plant modern in all respects, the management began checking to see what other mills had been doing. Manufacturers, engineers, and salesmen were consulted and finally an evaporative cooling system was selected, designed to produce the relative humidity needed plus a more comfortable working atmosphere, all controlled automatically within reasonable limits and at reasonable operating costs.

The system consists of a Parks-Cramer central station installation of five separate units, each automatically controlled so that proper conditions can be maintained for each step in the manufacture of the product.

The circulating fans in these five systems handle as much as 17,000 tons of air per day. Inside and outside air is proportioned automatically accord-

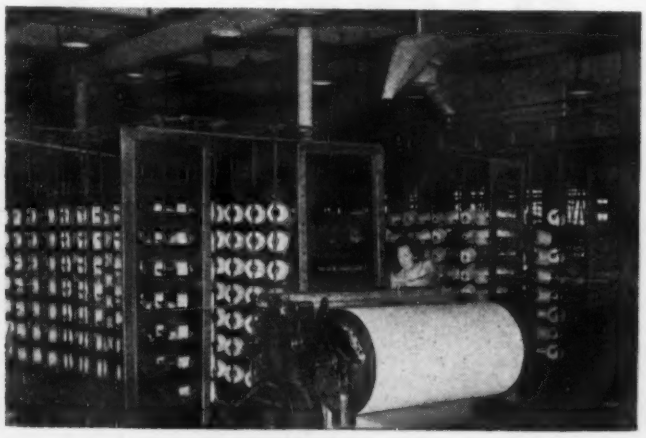
(*Continued on page 192*)

Relative Humidity Maintained in Tire-Cord Plant

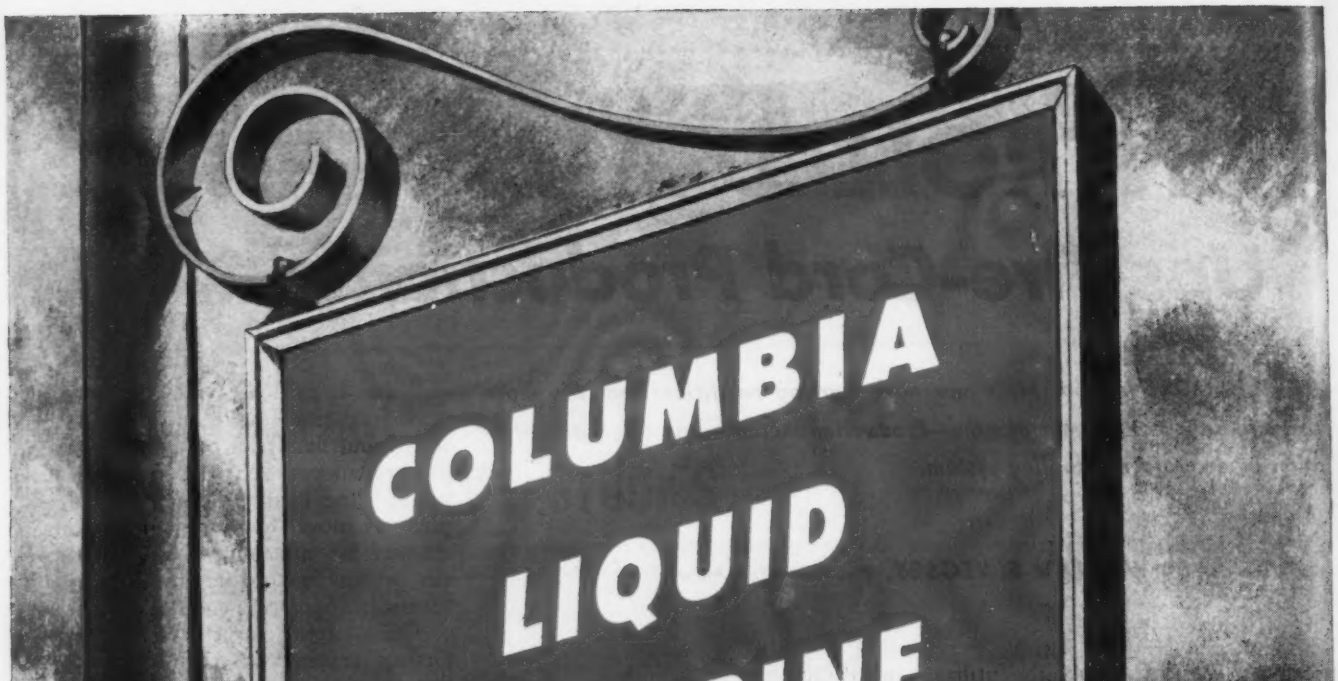
Section	Dry Bulb, Deg. F.	Wet Bulb, Deg. F.	Relative Humidity, %
Forming twister room	80	71	65
Cotton cable-twister room	84	76	73
Rayon beam-twister room	87	68	55
Rayon cable-twister room	87	68	55
Spinning room	84	75	65

In the forming twister department, air is kept at proper relative humidity and summer temperatures are moderated. The ducts in background provide the room with a 65% r.h. at 80° F.

Photos Courtesy General Tire & Rubber Co.



Another view in the Aldora plant shows high-speed beam warpers in the cotton division. Aside from using ducts for air circulation, as shown in the background, a traveling cleaner is provided to blow lint from the creels and gives added air circulation.



A Good Sign to Follow

As military requirements relax, increasing quantities of Chlorine will become available for normal use. Columbia—always alert to serving its customers—can be relied upon as a superior source of this important basic chemical. Supplied in all types of equipment including the new 55-ton single unit tank cars.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY • COLUMBIA CHEMICAL DIVISION
GRANT BUILDING • PITTSBURGH 19, PA.

Chicago • Boston • St. Louis • Pittsburgh • New York • Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte • San Francisco

VISUAL EFFICIENCY
Improved at Magnet Mills

HIGHLIGHTS: *Eye tests assist in sifting of employees for the proper job—Potential wages and production of applicants for employment have been predicted with surprising accuracy—Proper selection of workers for the job has reduced training expenses which formerly ran up to $500 per worker.*

By G. LUTHER WEIBEL,
Magnet Mills, Inc., Clinton, Tenn.

WHEN MANUFACTURING full-fashioned and seamless hosiery it is important that employees on such operations as sewing, pairing, looping, matching, etc., possess keen vision at close distances. They must be able to maintain such vision for long periods with only occasional interruptions.

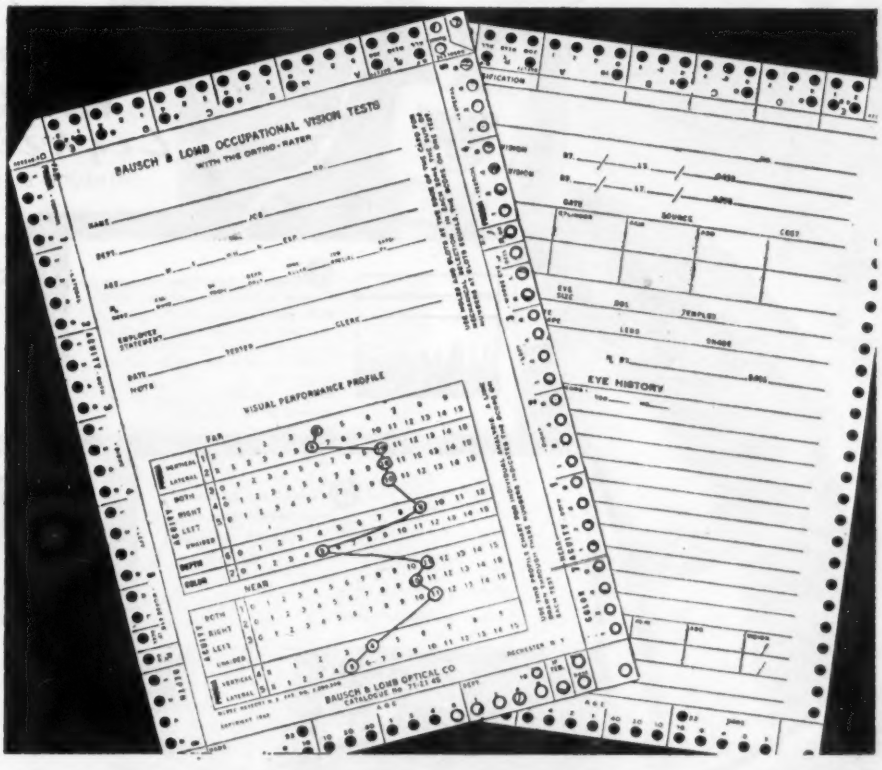
Here at Magnet Mills, the importance of employee vision is recognized, both as a factor of employee morale and of quantity and quality production. As a result, the company has installed a system of visual performance tests for determining the individual visual characteristics of operators.

ORTHO-RATER REVEALED. The high point of an "open house" held by Magnet Mills in June was a demonstration of the visual-testing program inaugurated some months ago. We had as guests more than 1,000 visitors from Clinton and nearby towns. They were particularly impressed with demonstrations of visual-performance tests made with a new optical instrument called the Ortho-Rater. This instrument, designed for rapid and reliable measurement of employee visual characteristics, was developed by the Bausch & Lomb Optical Co. and industrial psychologists at Purdue University. Invaluable cooperation in the selection of visual-performance tests used in the Ortho-Rater was given by the Committee on Industrial Ophthalmology, Section on Ophthalmology, American Medical Association, and the American Optometric Association.

The Ortho-Rater is an important factor in the Bausch & Lomb Industrial Vision Service—a plan which enables management to determine exactly where present employees and applicants for jobs can best be fitted into industrial effort. The service makes available a fact-finding system by which vital and usable data on employee visual qualifications are quickly obtained.

In our mill, both applicants for work and present employees are given the Ortho-Rater tests. Each sits at a table and looks into the eye instrument while one of our staff administers the tests and makes the records. The applicant or employee sees in the Ortho-Rater a series of numbers, designs, and parallel lines. The person giving the tests asks questions as to the location of these numbers, designs, parallel lines, etc. The answers determine the score. The score indicates whether the applicant or employee is fully capable of operating a looping machine or should be placed on some other job in the mill.

After three years of groundwork, the first Ortho-Rater was perfected in 1943 for use by war industries. This instrument is intended to give vision ratings at distance and near for determining the seeing of employees, depth perception, color discrimination, and phorias or measurement of the lateral and vertical displacement of images in both eyes. Ratings at time



Record for use with the Ortho-Rater is of the peripheral slot type to permit removal of cards by insertion of tumbler in hole representing ratings. Front and back of the cards are shown; one side has been filled in with results of test.

FROM DOME REFLECTORS TO FLUORESCENTS

You can depend upon highest quality efficiency and durability when you

SPECIFY BENJAMIN PORCELAIN ENAMEL LIGHTING UNITS

Low cost, high efficiency and "built-like-a-battleship" durability make Benjamin Turn-Lox RLM Dome Reflectors the logical choice for tens of thousands of industrial locations. Like all Benjamin units, they are built to deliver maximum lighting efficiency at *lowest* per year operating and investment cost.

In specifying Dome Reflectors, remember that only in Benjamin units do you get all three: *the RLM Label*, for certification of correct design, high efficiency and uniform quality; BENJAMIN TURN-LOX for time-saving cleaning and relamping operations; BENJAMIN LIFE-TIME PORCELAIN ENAMEL . . . . specially developed for battleship durability, quicker, easier cleaning, and maintenance of original lighting efficiency through the years. For Free Bulletin, write Benjamin Electric Mfg. Co., Dept. H, Des Plaines, Ill.

BENJAMIN TRADE MARK

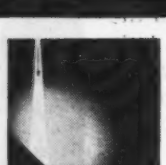
Lighting Equipment

DISTRIBUTED EXCLUSIVELY THROUGH ELECTRICAL WHOLESALERS

1 Benjamin Life-Time Porcelain Enamel reflecting surfaces meet RLM specifications of one ground and two coats of separately fired white porcelain enamel and in addition, have durability advantages resulting from years of Benjamin pioneering in porcelain enamel development.

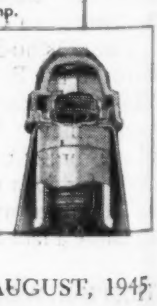
2 Corrosion Resisting Reflector Bead Construction . . . example of Benjamin "built-like-a-battleship" construction; porcelain enamel seal protects against moisture penetration and corrosion.

3 Shielding Angle of 72½ degrees (RLM specification) minimizes direct glare.



4 Highest Light Reflecting Efficiency consistent with proper light diffusion; meets highest RLM specifications for light output of 78% or more of light generated by bare lamp.

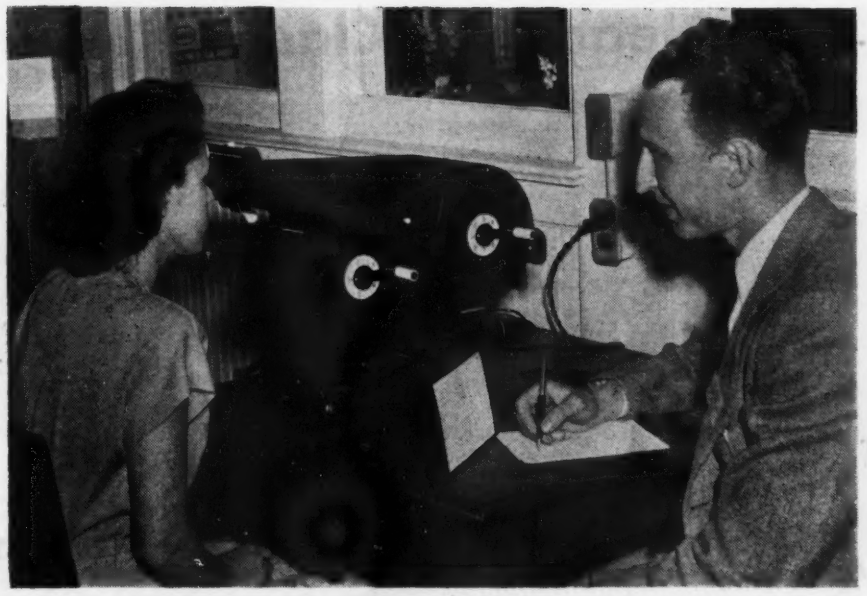
5 Turn-Lox . . . rugged, foolproof, bayonet type coupling which permits detachment of reflector and lamp as one unit. Contacts are self-cleaning when reflector is turned one quarter turn for removal and replacement.



of tests are recorded on cards by simply circling the results in the visual performance profile as shown on one side of the sample card that is illustrated.

We can almost determine the average earnings of an employee by the application of these Ortho-Rater tests. Invariably, persons with high scores have better earning capacity than those with lower scores.

The Ortho-Rater is intended solely for the measurement of visual performance, and cannot be used as a clinical instrument. For that reason, we do not attempt to advise whether or not the person being tested requires eye care. However, the facts we do obtain identify persons with substandard or inadequate visual performance, and thus, we are able to refer them to competent professional ophthalmologists or optometrists for visual attention. And by the referral of these people to professional eye men, we are also sure of the maintenance of vision of veteran employees.



Visual skill test being given by G. Luther Weibel, personnel director, to a prospective employee. According to Mr. Weibel, "We recently placed a pair of occupational glasses on a looper with 27 yr.'s experience. Her previous average production was 36 doz. per day. Since obtaining the glasses she is averaging 42 doz. per day."

EYE TEST PROGRAM. Tests will be given annually. By helping employees to keep their vision up to par, they will be enabled to maintain earnings longer than usual. If an employee requires glasses, they can be obtained through professional sources and deductions made from the payroll. In some cases, the mill may arrange for occupational glasses for use on certain critical visual jobs.

Heretofore, our training costs have been excessive due to poor vision of some applicants. These costs ran as high as $500 per individual. With the new system of determining visual performance, we are confident we shall be able to effect a substantial saving in training costs.

A vision program similar to the one we are using should be a boon to personnel directors, safety engineers, medical directors, and others. And, we think it will reduce absenteeism and cut down turnover. In some metal industries it was found that the accident rate could be reduced. Another important achievement through the application of usable visual data is the ability to increase quantity and quality production. Among other advantages are more efficient use of available manpower and complete records for use by the plant medical department in compensation cases.

RESULTS OF EYE TESTS. In our mill we found that headaches are often due to eye strain and can be prevented by the selection of employees with proper vision for a particular job.

Already this system is popular with employees, and it has proved to be a morale builder in the plant. We have not yet had time to give tests to all the employees, but many have come to us before it was their turn and asked that they be given the tests. They were enthusiastic about the testing program. It will take time to get everything set up and running just as we planned it. But, we are sold on it. Employees cooperate because they know it is for their benefit.

Results of tests of 52 loopers, both seamless and full-fashioned and including both experienced workers and learners, were sent to the Industrial Vision Institute at Purdue University for analysis. This statistical service is an important part of the Ortho-Rater program. These loopers were classified by supervisors into three groups according to job performance. Those rated highest were accepted as having the essential characteristics of good operators on that job.

Use of Ortho-Rater records have assisted in placing operators in jobs to which their eyes are best suited, such as in seaming. By means of such records and attendance records, it has been discovered by the author that Magnet has 50% more absenteeism among employees with poor vision than among those with correct eyes for the job.

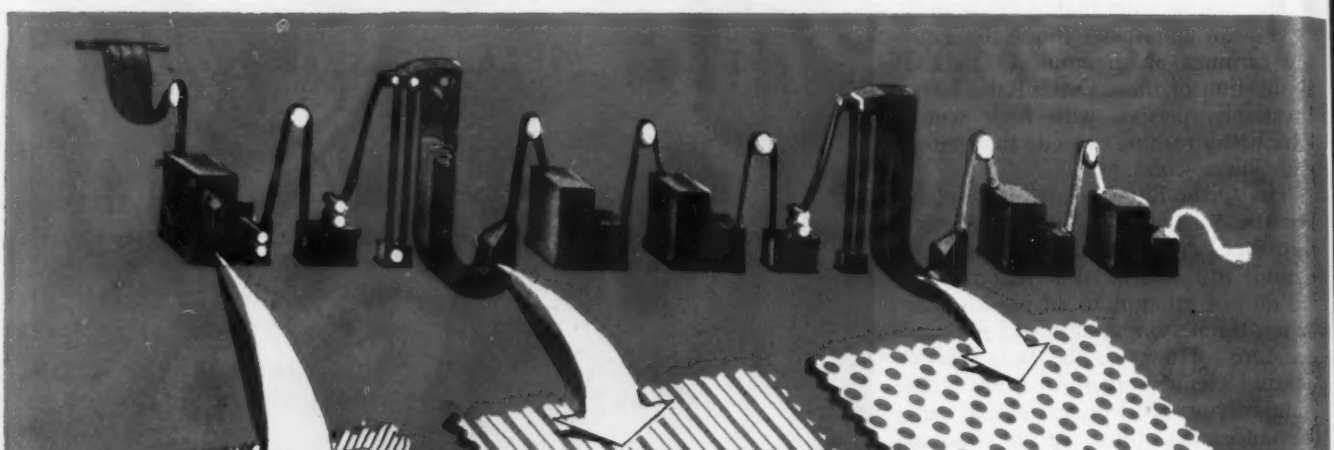
Facts gathered as a result of these data prove that nearly half again as many successful loopers were in the group which met simple vision standards as there were in the group which failed to meet them. Of those who failed to meet these standards, a majority can be helped by professional aid and glasses designed for the job.

The Institute recommended certain visual standards which were based not only on the results of those 52 loopers but also on the results of similar studies of loopers in other hosiery mills.

Those who meet the visual standards for this job are more frequently good operators, and those who do not meet the visual standards are frequently poor operators. Therefore, the indicated visual standards are important for good performance on this job. The difference in job performance between all present operators and those meeting all the visual standards is an indication of what may be achieved on this job through proper attention to the vision of employees.

Another good example of the significance of visual skills is on the job of sorting and packing hosiery. By analysis of the Ortho-Rater vision test records data, it was possible to determine the visual skill standards which would aid materially in the selection of employees for this job. Results of the study show that a gain of 17% in superior operators can be achieved.

Bleach All Classes in One System



TOMORROW when you get rush orders for many different types of bleached goods or sample lots, you can produce them quickly and economically by putting them through a Du Pont Continuous Peroxide Bleaching System.

In one system, a highly diversified line—for example, whites, prints, vat- or naphthol-dyed—can be handled continuously and speedily. Simple adjustments for cloth construction, bleaching requirement, speed and other desired factors are easily made. Bleaching can be closely controlled so that the systems return rapid, continuous output with a uniform, predetermined bleach! These Du Pont systems save steam, water, power, chemicals and labor. And they're compact —*all in one "package"*!

Developed as a contribution to the textile industry, these continuous bleaching systems are backed by Du Pont Technical Service, plus the assurance of constant improvement through never-ending Du Pont research.

GET THIS FREE BOOK! "Du Pont Continuous Peroxide Bleaching Systems" tells in pictures and specific facts the story of this new, efficient Du Pont Continuous Bleaching. Get your copy *now!* Just write E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

INVEST IN THE PEACE WITH *MORE* WAR BONDS

DU PONT PEROXIDES

DU PONT **BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY***

SPUN-RAYON WARPS
More Difficult on Silk System

HIGHLIGHTS: *Splitting yarn into layers during warping aids thread separation at front of slasher—Tension should be kept low— High temperature and thin sizing solution aid penetration— Blends influence formula used.*

By RAYMOND DODSON
Slashing Division, Textile Research Dept., American Viscose Corp.

THE PREPARATION and slashing of spun rayon on the silk system is a great deal more difficult and more troublesome than on the cotton system.

With the latter system, each end is separated at the front of the slasher by means of break bars and expansion combs. The comparatively short length of the warps made on the silk system would entail considerable time if each warp were to be threaded through the cotton-system break bars and expansion combs. As a result, a half-way measure is advocated for warps made on the silk system. Five break bars and an expansion comb are used when running six section beams on the cotton system, but similar warps made on the silk system can be run through a special lease reed, permitting the use of three split rods during slashing.

Splitting the warp in four layers when warping is beneficial not only in connection with spun-rayon but also with continuous-filament warps, whether viscose or acetate rayon.

Whenever more than two ends per dent are found in the warping condensing reed, it is obvious that several ends within the same dent will travel at the same level and, therefore, will have the opportunity to roll or twist around each other. To prevent this from occurring, it is desirable to split the warp into four layers, thereby increasing the number of layers and minimizing the chances of rolling. When doing so, it is possible to insert a lease string between each of the four levels, thereby providing means to insert a break rod later during slashing.

The necessity of preparing excellent warps cannot be over-emphasized—for the slashing room cannot be expected to turn out a good product unless it is supplied with good warps.

TENSION. - During beaming, it is desirable not to apply excessive tension. The warp should be kept taut enough to eliminate sagging but should not be subjected to an excessive pull. It is not imperative to beam hard when warping.

The desirable sizing ingredients are those which enable the yarn to retain some of its flexibility and which, at the same time, lend sufficient cohesion to prevent splitting and undue shedding on the loom.

No definite formula can be given; what one mill uses successfully will not answer another mill's requirements.

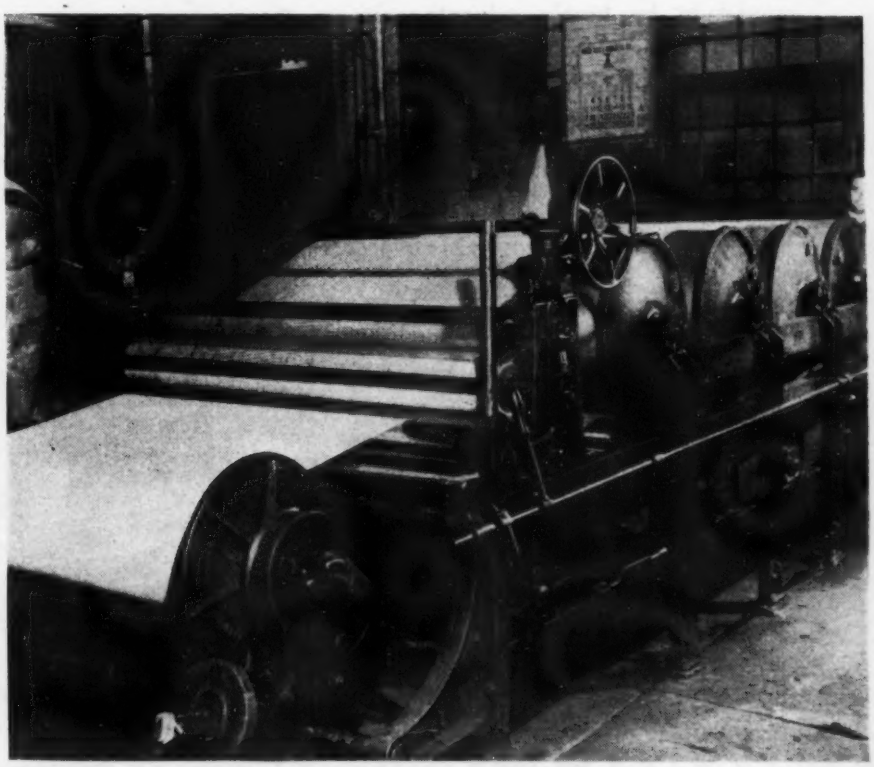
Sizing formulas are to be developed to suit local conditions, in accordance with one's experience and logic. The objective is to change the appearance and hand of the yarn as little as possible while sizing it with soluble ingredients which will enable it to be woven successfully.

To repeat, this article deals solely with the silk system; and statements made are not to be confused with practices followed on the cotton system, although some of the ideas can be used in both.

Slashing of spun-rayon warps is complicated by the fact that blends comprising a wide range of fibers are being used. A sizing formula set for 100% spun yarn will not answer the needs of a rayon-and-acetate blend or a rayon-and-wool blend. Some changes are to be incorporated to answer the specific requirements of the various fibers involved.

As a rule, however, it is advisable to immerse the warps in the size trough; and, when possible, it will be found quite advantageous to subject the warp to a second immersion and squeeze.

SHRINKAGE IN WIDTH. All spun-yarn
(*Continued on page 174*)



A double squeeze is being given this silk-system warp because there is no provision for two immersions.

For Improved Carding of **STAPLE SYNTHETICS** *Choose . . .*

PROCTOR
STAPLE FIBRE CARD

RAYONS
ARALACS
ACETATES

If you are engaged in the carding of any of the staple synthetics, you should know more about the Proctor Staple Fibre Card. This highly efficient card is especially suited to the carding of rayons, acetates, aralacs and other similar synthetics.

It is possible to obtain large scale production from this type of card, for metallic wiring has proved to be highly advantageous in the handling of nearly all of the staple fibres. This card, which has a 30" diameter main section, is usually equipped with a can-coiler or balling head, so that the finished carded sliver can be carried forward to the drawing or spinning operations with minimum handling. The feeding arrangement shown here is a 3-lap feed table, the laps being made up on a special Proctor lapping unit designed for this purpose. The card can be supplied with a Proctor Automatic Feeder of new design or any other type of feeder. The most uniform sliver, however, is obtained by lap-feeding on the feed table illustrated.

Whatever staple you may be handling, whatever production you must achieve, Proctor engineers can help you by recommending the card that is individually designed in every respect to meet your individual plant requirements. Write today, telling us your problem.

manufactured by
PROCTOR & SCHWARTZ · INC · PHILADELPHIA 20 · PA.

Chemical Treatment Produces ELASTIC COTTON GAUZE

HIGHLIGHTS: *Elasticity of 20% plus clinging power developed in bandage material—Navy is testing —Considered of value in orthopedic surgery and for pressure dressings— Allows more freedom of movement.*

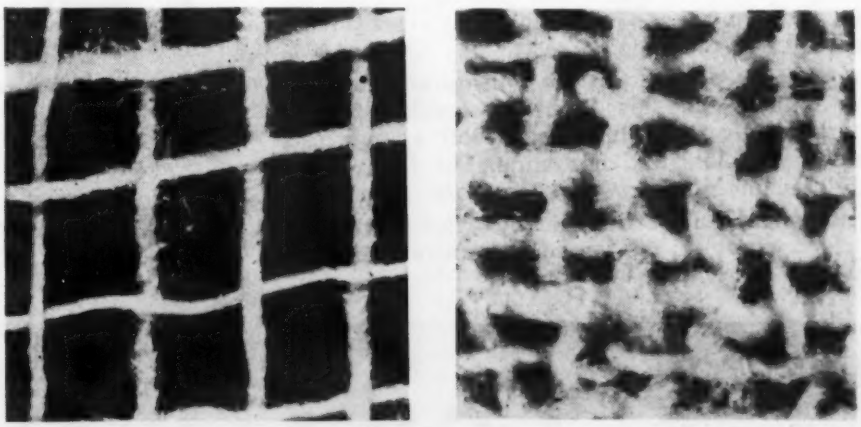
A NEW SURGICAL GAUZE bandage with elasticity and clinging powers has been developed by Charles F. Goldthwait and James H. Kettering of the Southern Regional Research Laboratory, New Orleans, Bureau of Agricultural & Industrial Chemistry, U. S. Department of Agriculture. The bandage, which has already been subjected to more than 9,000 tests over a period of a year, is being considered by medical officers for use in all government hospitals. So far, the entire output of some 9000 unit strips has gone to the Naval Hospital in New Orleans. Under the supervision of Dr. Moore Moore, Jr., of Memphis, Tenn., commander, U. S. Naval Reserve (Medical Corps), about 5000 tests of the new bandage have been made on patients under his care.

The new pre-shrunk, mercerized cotton gauze is self-fitting and self-tightening, due to the stretchability of the material. Standard sterilization techniques can be used on the material without loss of elasticity. The bandage weighs one quarter less than an ordinary bandage of 44x36 gauze. It is considered to be of great value in orthopedic surgery where it is important that the bandage should not slip; it is useful for binding plaster splints; it is also useful for pressure dressing such as is supplied in the case of skin grafts and burns.

The explanation given of the new bandage's elasticity and clinging powers starts with the well-known fact that cotton shrinks when immersed in a concentrated sodium-hydroxide solution. The solution causes cotton fibers to swell and to expand within the spiral structure of the yarn in the cloth. In turn, this causes the yarn to shorten and the cloth to shrink. An open weave, such as is found in lighter weights of surgical gauze, develops crimps and kinks, thus increasing the shrinkage. However, this makes the gauze easily stretchable.

The shrinking process is a mercerizing treatment. The yarn expands in diameter and becomes loose in construction, with inter-spaces much smaller. Under low tension the yarn is easily stretchable but when tension is released the gauze returns approximately to the dimensions of its shrunk form. An example was given of a piece of this gauze that was stretched from an initial length of 10 in. to a length of 12 in., a stretch of 20%. When released from tension, this gauze had a recovery of about 15%, which means that it returned to a 10.5-in. length.

Surfaces of bandage-wrappings intermesh, due to the crimping and kinking. In this way any layer of the bandage-wrapping is prevented from slipping onto another layer.



Original unimproved cloth from which bandage fabrics were made appears at the right. Left shows the bandage fabric with elasticity both warpwise and fillingwise. Magnification of both is the same.

Photo at top of page—The improved bandage, left, shows the greater freedom of movement permitted by the elasticity of the gauze. Note that it also clings better.

Flexibility

A "BETTER SWEATER" *feature of*

LEIGHTON

KNITTING MACHINES

HEAVY SHAKER
2 TO 4 CUT

BABY SHAKER
4 TO 10 CUT

Sweater manufacturers are installing Leighton Knitting Machines because they produce sweaters that meet the modern demands of modern styles —NO MATTER WHAT YARN OR TYPE OF STITCH DESIRED.

Leighton operates the plate needles from outer dial towards the center. The needle butts are spaced wider than the gauge so the smooth cam action reduces yarn strain.

Each needle nearly completes its stitch before the next needle engages the yarn at the carrier. This permits a wide range of yarn sizes on the same gauge machine.

The plate needles form the outside stitches and the cylinder needles form the inside stitches. Sharp bends are eliminated — soft spun yarns knitted with less end breakage. The face of the fabric is in full view for operators' inspection.

Automatic Transfer from jersey stitch to rib and back to jersey on the Leighton Transfer machine.

SPECIAL ATTACHMENT
FOR BRUSHING

LEIGHTON MACHINE COMPANY

ESTABLISHED — 1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE

INCORPORATED — 1894

Washington Aids Program For IN-PLANT FEEDING

HIGHLIGHTS: *Dept. of Agriculture agents will cooperate with survey and detailed plans—Benefits include better health and morale of workers and lessened turnover and absenteeism — Efficiency of production helped.*

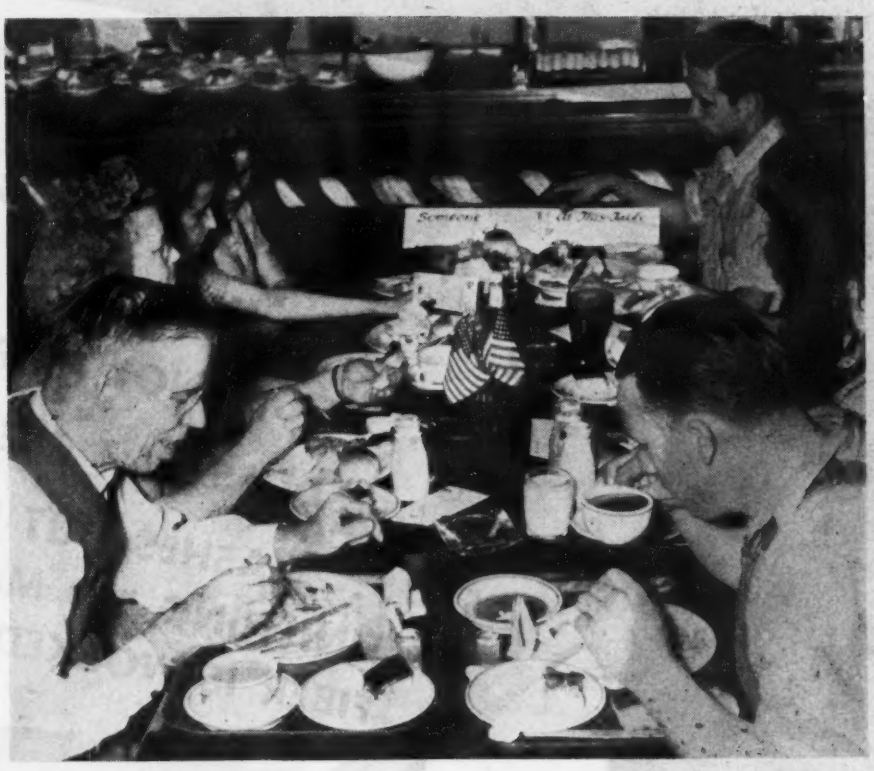
By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

THE CURRENT ENDORSEMENT of the industrial feeding program, both by industry and labor, indicates that it will continue to expand into the post-war period. Among the strongest advocates are management and labor in the textile industry. It has been demonstrated that an intelligently planned food program not only has a beneficial influence on the health and welfare of the workers but it also increases production efficiency, heightens morale, and results in improved labor-management relations.

Proof of the success of the program was evidenced in the large volume of letters and telegrams of protest that poured into Washington when it was learned that the U. S. Department of Agriculture appropriation for free advisory service on industrial feeding was to be dropped entirely as of the end of June. So great was the pressure to continue the work that a special three months' appropriation was made. Continuance of the service beyond that time is one of the early decisions to be made by the new Secretary of Agriculture, Clinton P. Anderson.

The advisory service of the department's industrial feeding program is available upon request and without cost to management of large or small plants. Requests should be sent to the nearest USDA regional office. These offices are located in Atlanta, Dallas, Chicago, New York, and San Francisco. The USDA industrial food specialist will make a survey of the plant which may result in advice on expansion of existing facilities, installation of a new food service, or re-arrangement of present facilities. He

(Continued on page 176)



Employees enjoy wholesome meal leisurely in new cafeteria of Beaumont Mfg. Co., Spartanburg.

TESTIMONIALS FOR INDUSTRIAL FEEDING PROGRAM

The following is taken from an address by Dr. R. F. Abercrombie, the director of the Georgia Department of Public Health:

"Experts know that workers maintained on deficient diets become more easily fatigued and suffer from loss of interest in work, mental depression, and increased susceptibility to many illnesses. Their sickness absenteeism rate is much higher than in the well-nourished group. These facts are of importance to all industry, but apply particularly to the cotton-textile industry. Improvement of opportunity for good nutrition is probably the greatest single contribution that can be made to the upgrading of the textile worker and the industry which depends on his efforts."

The following are examples of statements recently received by USDA which indicate the success of the program: Frank C. Williams, vice president, and manager, Roanoke Mills Co. and Patterson Mills Co., Roanoke Rapids, N. C.: "We have installed and are operating three cafeterias for feeding industrial employees in our mill. This program is proving highly satisfactory, encouraging employment, and reducing absenteeism."

J. Lee Keiger, Indera Mills Co., Winston-Salem, N. C.: "We have found industrial feeding invaluable in our industry and hope it can be continued."

John W. Edelman, Washington representative, Textile Workers Union of America: "Strongly recommend expansion of in-plant feeding in textile mills. Sufficient evidence exists to prove that workers' health, morale, and production efficiency improve when adequate food is offered on the job at a reasonable price. Industrial feeding urgently needed in peace as well as in war in textile industry where production lags are critical."

James H. Fullerton, president, Mecklenburg Industrial Union Council, Charlotte, N. C.: "We have a number of in-plant feeding programs in our district, and our observation is that they have been very beneficial not only from the standpoint of greater and more efficient production, but also as a substantial asset to the morale and health of the workers."

DOES THE GENERAL-PURPOSE OIL YOU NOW USE HAVE *ALL* THESE FEATURES?

SHELL TEXTILIS OIL 34K

1 . . . IS NON-RUSTING
2 . . . IS GUM-FREE
3 . . . DOES NOT DRIP
4 . . . DOES NOT CREEP
5 . . . WASHES OUT IN THE FINISHING NO MATTER WHAT FIBER IS WORKED

Point by point, check the general-purpose lubricant you are now using in your machines. It may be doing a perfectly good job of lubricating. But is it easily washed out in the finishing process? If it isn't, then you must either change the lubricant to suit the fiber being worked or take a chance on having high stain losses in the finished goods.

This isn't necessary when you use Shell Textilis Oil 34K. For in addition to its finer lubricating qualities, it also washes out in the finishing process, regardless of fiber being worked.

Shell Textilis Oil 34K is but one of a complete line of lubricants designed specifically for each type of textile machine lubrication. Many textile manufacturers have found it worth their while to talk to one of our Shell Lubrication Specialists about their textile lubrication problems. Why don't you?

SHELL OIL COMPANY
INCORPORATED

TEXTILIS OILS

TEXTILE Equipment NEWS

New Ring Twister Inserts Wide Range of Twist

A redesigned doubler-twister with the capacity for inserting from ½ to 70 t.p.i. has been announced by the Atwood Division, Farrel-Birmingham Co., Inc., Stonington, Conn. This machine marks the entrance of the company into the field of doubling and twisting spun yarns of wool and cotton in addition to the throwing of filament synthetic yarns. The machine will be built in two models: Model 10, an improvement over the former similar machine, for packages up to 1½ lb., and Model 11 for larger packages up to 3 lb.

Handling from 2 to 12 ends, the Model 10 twister will deliver from cakes, cones, bobbins, or tubes onto any size package up to 5 in. in diameter.

One of the outstanding features of the machine is the feed-roll stop motion which, it is stated, operates on a principle that heretofore has not been applied to a textile twisting machine. Some of the advantages resulting from the use of the stop motion when doing ply work are said to be: (1) knots can be tied in a single, (2) yarn with a ply missing is eliminated, (3) the spindle is stopped whenever an end breaks so that cleaner yarn results and waste is materially reduced.

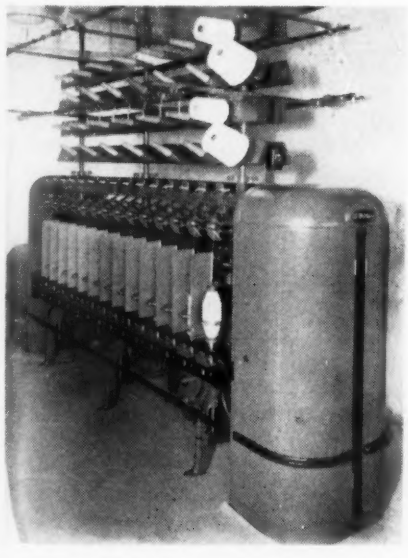


Fig. 1. Feed rolls and all parts which might cause injury to the workers or might accumulate lint, threads, or waste are covered. (Atwood)

In threading the twister, the yarn is passed around a large and a small feed roll. A separator flange on the smaller roll keeps twist from picking up other strands.

The builder motion operates at all times on a straight line or on a perfect circle, so that the rate of build is always uniform. This builder motion can be made to produce tapered-end packages or any of the commercial winds currently found on twisting machines. The Pittman roll operates in an oil bath and lubricates the face of the cam. The builder worm and worm gear are mounted in an oil-tight housing and need attention only once a year, according to Atwood. Wear is compensated for in the worm gear to remove the possibility of dwell or backlash. A traveling thread bar is synchronized with and is adjustable to the ring rail in order to keep tension as uniform as possible.

Plain or anti-friction bearing spindles can be supplied to accommodate the packages with a net yarn capacity up to 1½ lb. in the Model 10 and up to 3 lb. in the Model 11. The starting and stopping of one spindle does not effect any other, since an endless belt, rather than a tape, is employed. The belt can be put on the machine without splicing, and each spindle is individually tensioned.

Any type of ring can be mounted on the ring rail. The rail is counterbalanced with a set of spiral-wound flat springs and can be adjusted so that only a light pressure is required to move it. One or two counterbalancing units are employed, depending on the length of the machine. Rings up to 6 in. and traverses up to 9 in. are possible. Idlers with anti-friction bearings are standard equipment. They are expected to operate a full year between lubrications.

The twist gearing on the machine is so arranged that changing one gear from one shaft to another changes the twist direction. The twist gear is readily accessible and is mounted on a swing arm for easy meshing. The constants have been figured to obtain a 5 to 1 ratio without changing the constant.

The motor pulley drives the twister belt directly, without the use of chain, intermediate gearing, or belting.

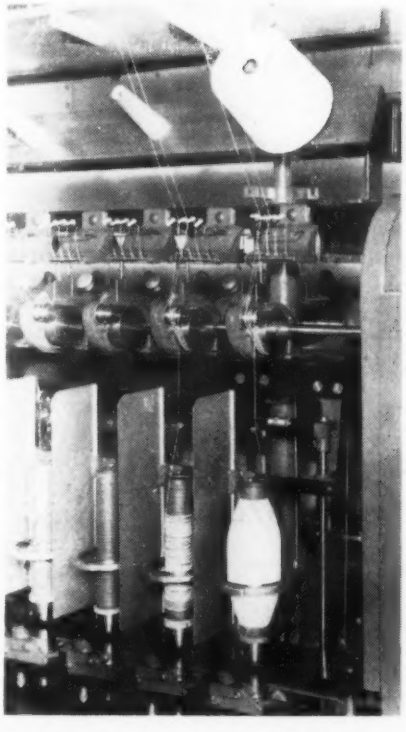


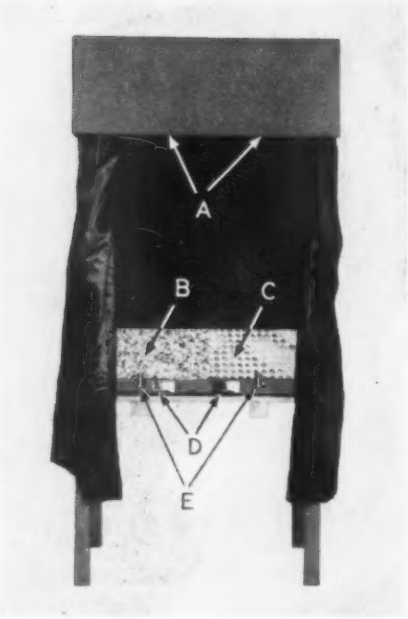
Fig. 2. The stop motion is actually part of the feed roll. The spindle stops when the end breaks. (Atwood)

Weights are used to keep a constant tension on the belt. Both ends of the machine are totally inclosed and the belt is covered. The machine is protected lengthwise and at the ends by guardrails.

According to Atwood engineers, lubrication of the machine has been designed so that no parts need to be lubricated under 144 hr. of running and most points need lubrication only one to four times a year.

Projector Enlarges Fabric 100 Times

A method by which an exact replica of a surface is made in clear plastic in less than a minute's time has been announced by Rex D. McDill, Cleveland, O. The equipment, known as the Faxfilm Comparator Apparatus,



Twin micro-projectors, E, beam the Faxfilm subjects at the twin reflectors, A, behind the hood. The reflectors show the images, B and C, upon the screen. Frame holders, D, may be moved to bring any part of one image next to any part of the other. (McDill)

projects at 100-dia. magnification the minute details of fabric surface conditions.

Model C-1000 is a complete projection booth which contains twin micro-projectors to permit focussing the subject side by side upon the screen with a standard for comparison. The images, about 20 in. square, appear on an inspection table about 6 in. from the projectors. This feature permits the operator to make fine adjustments in focus while standing at the inspection table.

The holders for the Faxfilm slides are movable to facilitate matching the direction of machine markings in each image, and any part of one image can be made to appear beside any part of the other. The apparatus requires about the same floor space as an average desk, and it may be set up in almost any part of a plant or office. The comparator should be particularly useful in studying the finishes of fabrics and in fiber magnification and projection.

Worm-Roll Fabric Spreader

A roll for processing fabrics in the open width by mills which desire to make use of a roll having a spreading effect has been developed by the Rodney Hunt Machine Co., Orange, Mass.

A special plastic covering is applied to the body of the wood roll and provides a smooth and relatively non-absorbent surface, especially desirable when handling wet fabrics. The spreading effect is obtained by a rubber spiral winding which goes left and right from the center. The shafts of the roll are anchored by the patented "Shaf-tite" head construction. The most common size is a 6-in. diameter body.

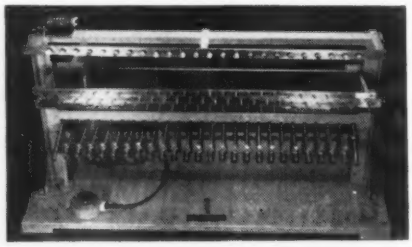
This type of spreader roll is exceptionally strong and light-weight. It is easy to keep clean, and is much lower in cost than a rubber-covered or metal roll.

Worm spreads fabric right and left from center. (Rodney-Hunt)

Fastener for V-Belts

A fastener, designated as "Flex-V", for A and B section V-belts, has been developed by Flexible Steel Lacing Co., 4607 Lexington St., Chicago 44. The fastener consists of two V-shaped end plates, an alloy metal hinge pin, and self-tapping screws for securely fastening the end plates to the belt ends. A simple applicator is used to prepare the belt ends, to place and

NEW ABRADER CAN TEST MANY YARNS AT ONE TIME



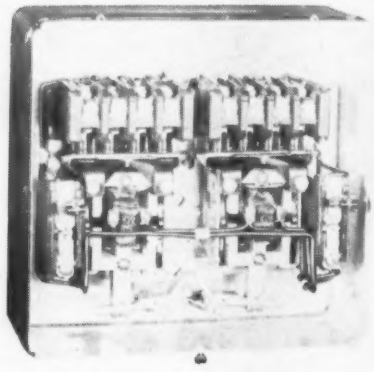
A new yarn abrader, experimentally developed by Dr. A. C. Walker of the Bell Telephone Laboratories, has been completed by the United States Testing Co., Inc., Hoboken, N. J. The abrader is used to determine the relative abrasive resistance of different types of yarn before they are made into finished products. It is equipped with an automatic stop motion and tests 24 individual specimens of yarn at one time. The action is supplied by an oscillating bar which moves up and down, thereby drawing the yarn over itself. Samples may be submitted to the Hoboken laboratories for tests, and the testing company is manufacturing this equipment for the trade. (U.S. Testing Co.)

A Flex-V fastener applied to a B-section V-belt. (Flexible Steel Lacing)

align the end plates, and to hold the screws upright during the actual fastening process.

The separable hinge joint permits quick, easy replacement of V-belts without dismantling line shafting or machinery. With no metal on the underside of the belt, Flex-V fastened belts can be run on a V-flat drive.

New Magnetic Starter Features Interlock Arms

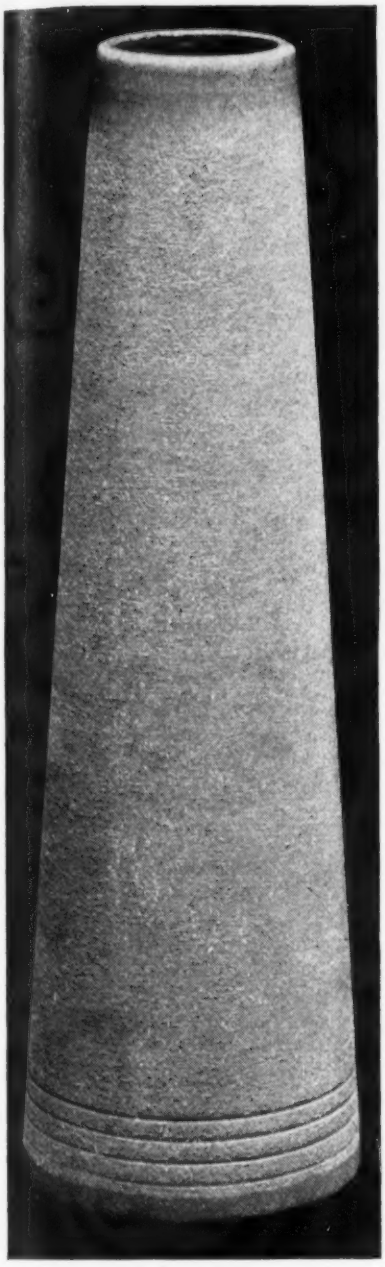


A new form of interlock prevents the closing of one contactor while an arc is maintained on the other. (General Electric)

A new a-c magnetic reversing starter, featuring a semi-interference-type mechanical interlock, has been announced by the Industrial Control Division, General Electric Co. Available in sizes 0 and 1, the new starter is designed for full-voltage starting of squirrel-cage induction motors, although it can be used also for reversing service when combined with a reduced-voltage starter.

Easy to adjust, the new mechanical interlock prevents the closing of one contactor while an arc is maintained on the other, thus averting a short circuit through the arc and the resultant burned contacts and blown fuses. In addition, the interlock arm of the closing contactor assists the interlock arm of the opening contactor in reaching its fully opened position. These arms are case-hardened and their under-side faces are buffed and polished to provide long life.

Other features incorporated in this starter are under-voltage protection when used with a push-button station



Smooth grain velvet surface for yarns of low twist Rayon (five to ten turns).

VELVET SURFACE

... An exclusive SONOCO Development that dates from the advent of Rayon Yarns. The velvet surface is obtained by a grinding operation, and can therefore be varied from coarse to fine surfacing.

Velvet surfacing can be applied to any taper, size, or weight cone, with open, round or crimped nose—optional scoring—with or without special printing.

Coarse grain velvet surface for ten turns and up—widely used by throwsters.

Velvet surfacing is to prevent yarn slippage in winding-on and press-offs, or breaking upon delivery.

Harder twist yarns require a harsher surface. Low twist yarns require a soft—or a smooth finish with velvet surface bands top and bottom. For *best* results the degree of surfacing is important. Our Technical Service Department is available to help you develop exacting specifications for handling any known yarn.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

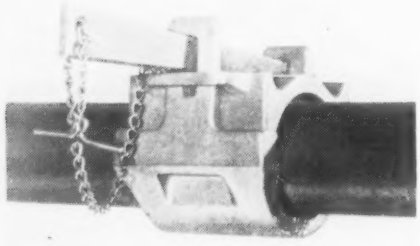
SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

or other momentary pilot-circuit device; under-voltage release when used with selector or limit switches; and overload relays which allow the motor to operate up to its maximum safe temperature before tripping it off the line. The starter is housed in a sturdy metal enclosure 9⅞ x 13⅝ x 4 9/16 in. equipped with a hook-on cover and finished with smoothly rounded corners. Dust-tight and water-tight enclosures are furnished when special conditions warrant.

PIPE ENDS ARE SEALED WITHOUT THREADS



A new line of flexible pipe couplings known as Drinkwater Presto-Lock has been announced by Drinkwater, Inc., 2323 South Michigan Ave., Chicago, Ill. The couplings are made in 11 sizes, ranging from 1¼ in. to 16 in. They can be used with any plain-end pipe without threads, grooves, or flanges. Two cast-iron sections are fitted over the pipe ends and a wedge key is inserted in the key channels and tightened by hitting lightly with a hammer. Gaskets used with the couplings prevent leakage. (Drinkwater)

Useful Accessories for Textile Mills

A lubricant, known as Bonoleum, has been announced by Bonded Oil System, Inc., 108 Massachusetts Ave., Boston 15, Mass. This lubricant contains a bonding agent of a high-film strengthening agent, and is impervious to chemicals, heat or acid. It is compounded with a castor-oil essence from which the gum-forming ingredients have been removed. Bonoleum eliminates surface-tension and assures a transparent, free-flowing lubricant.

A slide rule decimal point locator which will enable persons with a limited mathematical background to solve and place the decimal point up to 19 places in difficult problems containing cube root, square root, log and trig factors, is being produced by Pickett & Eckel, 53 W. Jackson Blvd., Chicago 4. The decimal point locator slide rule is 11 in. long, 2 in. wide, and ⅛ in. thick. It comes completely boxed with carrying case and manual.

A new explosion-proof motor for operation in ethyl-ether vapors, Class I, Group C, has been announced by Century Electric Co., 1806 Pine St., St. Louis 3. This motor is constructed to meet the specifications of the Underwriters Laboratories, Inc., for Class I, Group C installations where the surrounding atmosphere is charged with ethyl-ether vapor.

DYES & CHEMICALS — PRODUCTS & PROCESSES

Alkaline Process Shrinkproofs Wool

Development of the first alkaline process to combat felting or shrinkage in wool has been announced by Tootal Broadhurst Lee Co., Inc.

According to Frederick Atherton, vice president, the new process may be used on all forms of wool and mixtures of wool with cotton, linen, or rayon without damage to the cellulosic fibers. It may be applied even to wools containing elastic yarn without damage to the rubber. It is a permanent treatment and will neither wash out nor wear out. The process has recently been patented in the United States and is being made available to American finishers.

Tests showed that an untreated knitted heavy-weight wool underwear fabric shrank 20% in width and 14% in length after 2 hr. of milling in soap and hot water. An identical fabric treated with the new process showed shrinkage of 8% in length and no shrinkage in width after the same test.

After 3 hr. of milling, a pair of untreated wool socks shrank 20% in the leg and 11% in the foot. An identical pair, treated, showed leg shrinkage of 2% and foot shrinkage of 3%. Tests also showed that shrinkage of a half-wool and half-cotton fabric was reduced to less than 2% after treatment; whereas, normal shrinkage for the same fabric untreated was 16% in length and 11% in width.

Wool may be processed at any stage in manufacture, whether tops, yarn, fabric, or garments, Mr. Atherton states. Goods may be processed either before or after dyeing as colors do not bleed in the processing solution. Nevertheless, he warned, dyes should be fast enough to withstand the scouring which completes the treatment. In addition, as the process reduces felting, it should not be applied to a fabric on which a milled finish is desired until after the milling or fulling has been done.

Technically, the new process is described as "the treatment of air-dry wool with a dilute solution of caustic soda in a mixture of butyl alcohol and white spirit at room temperature for one hour, followed by removal of the processing liquor, acidification and final scouring. The used liquor is collected, distilled, and reused."

It is claimed that the caustic soda solution dissolved in organic compounds is not damaging to wool, as it has different properties from aqueous-caustic solutions. Also, the organic solvent confines the action of the caustic to the surface of each wool fiber.

Results of the process may be controlled by varying the conditions of the treatment including: (1) composition of the alkalies or solvents in the solution, (2) duration of treatment, (3) alkali concentration, (4) temperature, (5) relative proportions of wool and reagent, (6) moisture content of the reagent, and (7) moisture content of the wool immediately before treatment.

The new process has no effect on relaxation shrinkage in wool. Relaxation shrinkage is due to tension or stretching in wool fibers during manufacture or finishing. This tension is released when the fabric is washed for the first time or even wetted, after which fibers relax to their natural positions.

Resin for Coatings

PARAPLEX RG-8; Resinous Products & Chemical Co., Philadelphia, Pa.

This product, a long-oil alkyd resin, is a member of the Paraplex series of resins developed by the above company as plasticizers for nitro-cellulose lacquers. It will eliminate the use of dangerous solvents and special equipment and can be used as an all-purpose grinding medium. This resin, the

PLEXON, plastic's newest prodigy, is a monofilament yarn with a multifilament core. To weavers it offers a double advantage:

1. Because its base is of rayon, cotton or other fibre, dimensional stability is assured.

2. It offers all the advantages of plastics, imperviousness to grease, oil, or perspiration, and ease of cleaning.

And PLEXON can be used on practically every existing type of loom without difficulty, or need for change-over.

Now nationally advertised, so consumers everywhere are becoming increasingly familiar with this tag:

PLEXON
THE PLASTIC COATED YARN
® REG. U. S. PAT. OFF.

Freydberg Bros. Strauss, Inc.
EST. 1897
***Plastics* Division, New York 10**

company states, is compatible with nitrocellulose, ethyl cellulose, polyvinyl butyral, and chlorinated rubber. It is not compatible with the vinyl resins.

Because of its good pigment wetting, grinding qualities, and durability, as well as the fact that it is under no allocation restrictions, this resin should be of interest to all manufacturers of coated fabrics.

Water Repellent

PURITY Z.L.; R. A. Bowen & Co., 8 Irvington St., Boston, Mass.

Purity Z.L. is offered to the trade as a durable-type water repellent that will stand several washings in hot soap or several dry cleanings, except where chlorinated solvents are used.

It is applied as a water emulsion on a quetch or pad at temperatures below 80° F.

After drying, which may be accomplished with either a tenter frame or cans, the product is cured. Here, the manufacturer says, the product will be equally satisfactory if cured for approximately 5 min. at temperatures of 250° F; if higher temperatures are possible, a shorter time will also give satisfactory result. In the procedure, as outlined by the company, no soaping after curing appears to be necessary.

TO KEEP 'EM RUNNING

Electrical Insulation Needs Close Attention

Mills usually devote a lot of time to maintaining electrical equipment, but too often they neglect the insulation. The reliability of an electrical machine depends upon the condition of the insulation, according to Allis-Chalmers, Milwaukee, Wis., which lists the following seven enemies of the material used for covering the wire.

1. Heat. Insulation for the motors found in most textile mills is made of an organic material, such as paper, cotton, or silk, coated with a varnish. If overheated, this will become brittle and charred. In this condition, it is subject to failure with a brief spurt of overloading.

Heating is caused by poor ventilation in the motor, under-voltage, over-voltage, or by the presence in the motor of lint, dust, oil, etc.

2. High voltage. Breakdown of insulation frequently occurs when lightning strikes the power line or when switching surges permit instantaneous high voltage. Insulation in poor condition is particularly susceptible.

3. Water. Mineral salts are easily dissolved by water to form an excellent conductor of electricity. Tiny cracks in insulating material permit this salt solution to seep into the line and further damage the insulation.

4. Chemicals. Corrosive atmosphere in the vicinity of a chemical process will deteriorate any electrical-wire covering. The motor manufacturer should be consulted upon the selection and maintenance of insulation used under these conditions.

5. Oil. The coating of varnish used on organic insulating material will be softened by oil, so that the oil and any dirt it holds in suspension will pass into the cracks in the material. This causes overheating. Sleeve bearings equipped with oil rings should never be oiled while the motor is running. The shaft has a tendency to spray excess oil, and some of it will go into the motor and upon the insulation.

6. Mechanical injury. Insulation can easily be damaged by bruising, bending, scratching, or breaking. This is generally known; yet, it is a frequent source of damage.

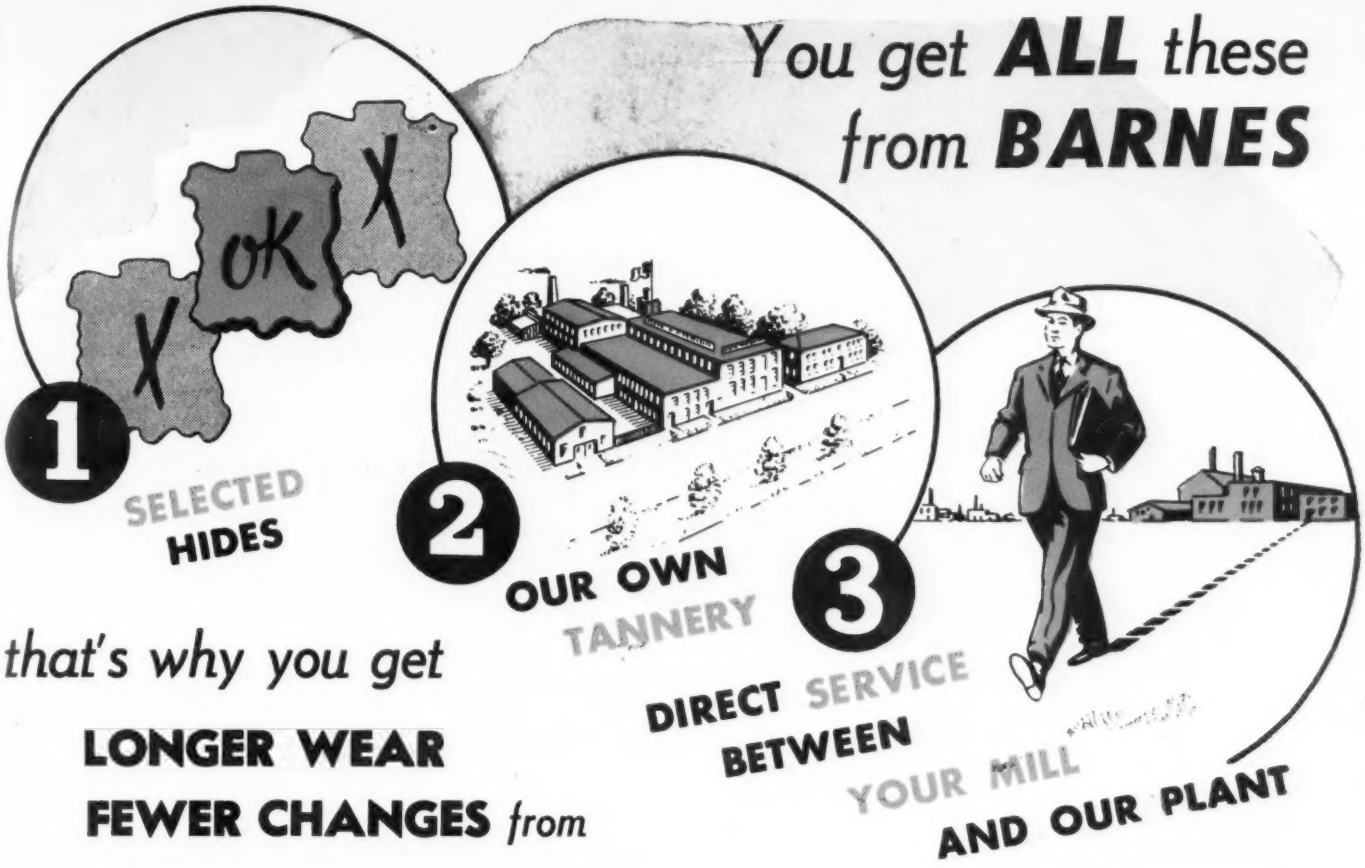
7. Dirt. Overheating resulting from clogged armature windings is the chief manner in which dirt harms insulation. To avoid this, the motor must be kept clean. In blowing dust out of windings, use only dry air at a pressure of not more than 40 lb. Cotton waste or lint should not be used to wipe the motor because loose lint or threads may be left on the motor to collect more dirt.

Trouble-Shooting Chart for No. 90 Winder

SYMPTOM	POSSIBLE CAUSE	CARE
Spindle creep	Worn clutch lever	Replace lever
Corkscrew bobbins	Slipping clutch	Clutch spring should be replaced or stretched
	Bobbin slipping on spindle	Bobbin may be worn or incorrect spindle is being used
	Spindle may not be running true	Straighten spindle
	Bent traverse wheel	Replace
	Worn hub or traverse bar	Replace
	Dirt or lint in hub	Clean
	Incorrect adjustment of traverse tension spring	If too tight, wheel will bind; if too loose it will spin
Incorrect build at base of bobbin or soft nose	Cop former not set properly	Reset cop former
Bobbins not uniform spindle to spindle	Cop former	Check cop former adjustment on each spindle. Use gauge. Do not try to do by eye
	Traverse-bar support not adjusted properly	Adjust support in proper position by loosening stud ST-158
Ridgy bobbins	Dirt or lint in traverse wheel hub	Clean with special traverse wheel hub cleaner
Thread guide breakage	Guide is probably dropping on bare spindle	Check the setting of the adjusting screw on thread guide holder
	Thread-guide holder rest omitted	Use the rest

The above chart appeared in "Helping Your 90 Keep Well and Strong," a booklet published by Universal Winding Co.

You get **ALL** these from **BARNES**



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LONGER WEAR
FEWER CHANGES *from*

BARNES CONDENSER TAPES

Each and every Barnes Condenser Tape is cut from special Tanned Leather. We select the leather carefully—only the FINEST Premium Domestic Steer Hides are used—free from all imperfections. The leather is then treated in our own tannery for oil-resistance and pliability. It is pre-stretched. The tapes are uniform in length and width. They are hand processed by skilled workmen. The net results that they run straight, and stay strong and flexible. Their thickness is an even 1/8 inch overall. Available in all sizes.

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Aprons for Combing, Preparing, Finishing and Drawing FRENCH AND BRADFORD SYSTEMS

Chrome—Brown—Special Tan

Plain and Hair-On Loom Strapping

BELTING

First-Quality Center Stock

Prestretched and Manufactured for Each Drive Condition

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BARNES **THE** *Textile Leather* SINCE 1876 HOUSE

Where unusual knowledge of Leather is combined with long years of Textile experience

APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ WAR BOND PRIZE WINNER FOR AUGUST

(June Contest)

Adjustable Jig Aids Building Pattern Chains

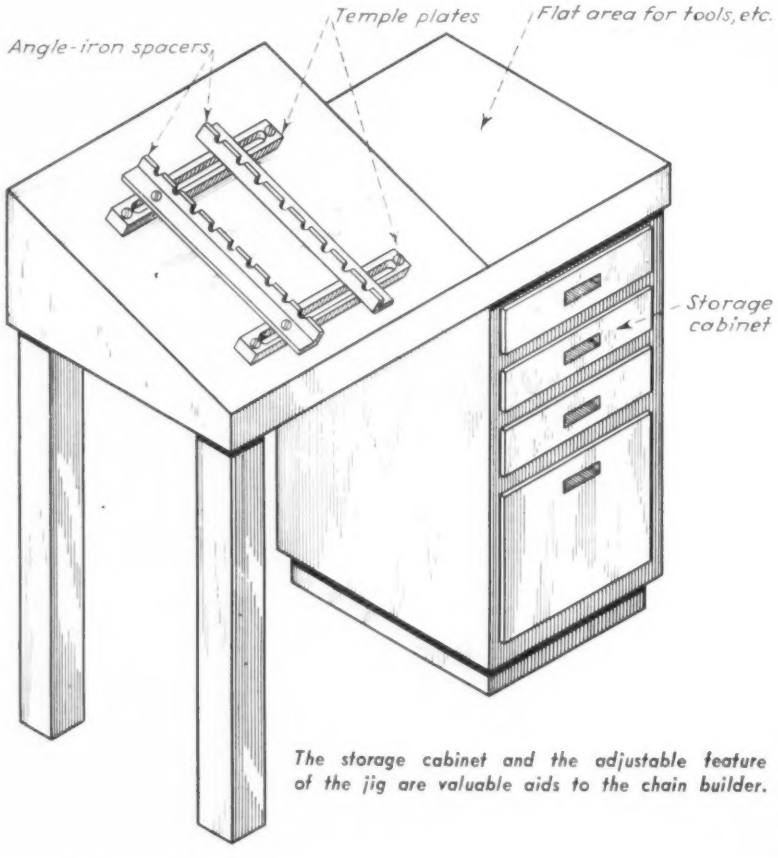
In many mills, the loomfixers build harness pattern chains on the workbench or floor. The latter practice is very inefficient, and the use of a workbench is quite an improvement; but unless some kind of jig is fastened to the workbench, the chain is hard to hold in place.

Where there is a great variety of patterns used and frequent changes on the looms are required, it will pay to have an adjustable jig made. This jig can be fastened to a board or, better, to a bench with storage cabinets. The accompanying sketch illustrates a bench which I have had installed in various mills.

Using the pattern chain of the 25-shade Cassimere head, we find that the bars are 1 3/8 in. apart, center to center; and, therefore, the notches in the angle iron from which the jig is made must be the same distance apart.

The dimensions of the bench are intentionally omitted because different fixers will need different sizes. However, 42 in. is a good average for the height of the

(*Continued on page* 144)



The storage cabinet and the adjustable feature of the jig are valuable aids to the chain builder.

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Sure, it's water. And we're *not* all wet. Water is going to be very much in the fashion picture in post-war years.

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PERMUTIT

WATER CONDITIONING HEADQUARTERS

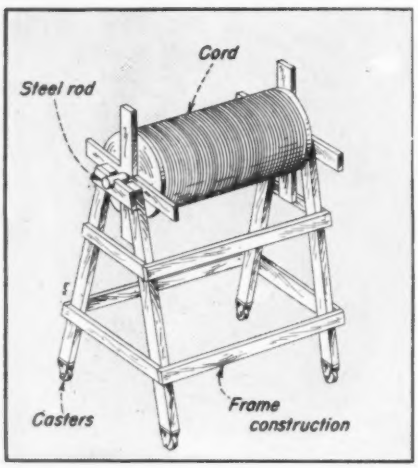
KINKS & SHORT CUTS

(Continued from page 142)

front edge of the sloping surface. The back edge of this surface should rise at a 30° angle from the horizontal. A 24-in. square is a convenient size for the sloping surface. The adjustable feature needed for various chains, such as a harness or box pattern, is obtained by anchoring the angle irons to temple plates.

Among the advantages of using a jig when building a long chain are speed and accuracy, because a riser ball out of line can be detected at a glance. (K-362) *Frederick Charles*

Lease-Twine Holder Eliminates Clumsy Ball

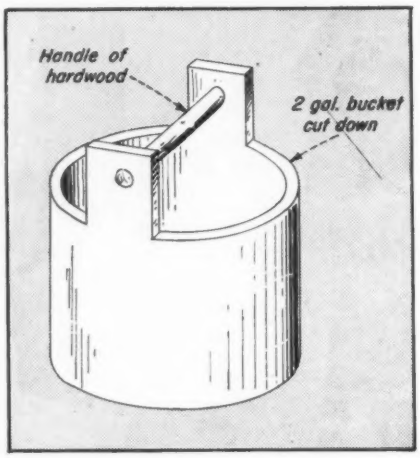


The lease twine runs directly from the holder to the lease opening.

Warper or slasher tenders can make a convenient lease-twine holder to replace the large cotton balls often used for warp-lease cord. The usual method for handling lease cords is to draw the required length of cord from a ball and string it by hand through the opening for the lease. This method often means waste as well as loss of time in preparing the required length.

The holder shown in the sketch is built high enough to run directly off the roll through the lease opening at the end of the sizing or warping machine. If a double lease-cord is wanted, the twine can be doubled or a holder for two balls can be made. The holder should be made from 2x3-in. stock, and a steel bar should extend through the center of the cord holder for support. The holder can be mounted on casters to facilitate moving. (K-358) H. E. Wenrich, Berwick, Pa.

Grease Container Saves Time For Oiler



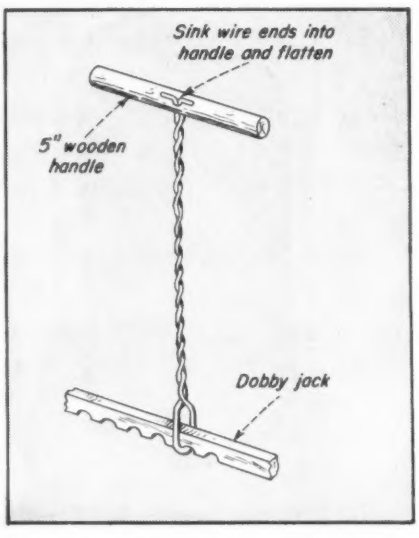
A 2-gal. galvanized pail, cut down in the manner shown, makes an excellent grease can for carrying a supply of heavy grease from the supply source to the fixer's section. The handle is fashioned from a piece of discarded picker stick. (K-357)

Dobby-Jack Lifter Aids Girl Weavers

When running certain weaves on dobby-head looms, it is customary to drop the shafts to make a pick-back; and on some fabrics, weavers prefer to raise all the shafts when a pick-back is necessary. Whatever the custom prevailing in the weave shed, heavy warp constructions often require extra shaft springs for harness pull-downs. Raising or lowering a shaft is sometimes a difficult task, especially for girl weavers. A simple jack lifter, shown in the sketch, makes the job a quick, easy one.

Double a 24-in. length of harness-mount wire, and place the sharp ends through a hole in a 5-in. length of a broom handle. Bend the wire ends and pull them back so that the ends sink into the wooden handle. Place the other end of the wire over a piece of metal or wood fastened in a vise, and twist the wire by turning the handle. The size of the metal or wood should be such as to leave approximately a 2-in. loop in the end of the wire to fit down over the top of the jack.

When using this lifter, place the looped end over the jack and pull on the handle to engage the dobby finger. (K-359)



This handy tool is made from a piece of wire and a broom handle.

Vibration of Reeds Causes Shuttle Marks

Often when running a fine rayon or celanese satin, especially on reeds 4 in. or more in height, shuttle or rub marks will appear in the fabric. From experience, I have found that most of the marks are caused by the vibration of the reed wires when thin wires are used. As the shuttle traverses back and forth, it will cause the reed wires to vibrate and rub the sizing off the warp yarn. This causes what is termed shuttle marks.

To overcome this, after the shed is properly set, a coil reed-spring should be put in the reed between the dents about ⅛ in. above the top shed line. If a spring is not available, beeswax can be used. Press the wax between dents. If a spring is used, a thin wire must be employed to hold it in place.

Either method will hold the reed wires firmly and will prevent vibration. (K-327) *J. L. Bove, Hazelton, Pa.*

Shuttle-Spindle Tools Can Be Improved Upon

Two methods for improving the shuttle-spindle adjusting tool are shown in the illustration. These tools are used for drawing back the shuttle spindle to release spring tension when removing the spindle bolts, or for drawing the spindle back to align with the hole when replacing the spindle bolt.

Such tools can be purchased from shuttle makers or made from suitable steel.

By cutting the slot a, in the end of the tool at top, it is not necessary to loosen the adjusting screw. Merely slip the tool end down over the spindle near the bobbin clip. This method saves a few minutes and makes spin-

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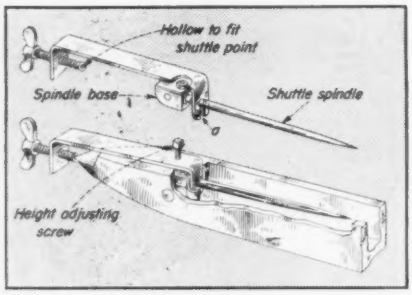
KINKS & SHORT CUTS

(Continued from page 144)



Top. Cut a slot in the end of the tool to slide over the spindle. Bottom. A height-adjusting screw will bear the spindle blade up by forcing the base down.

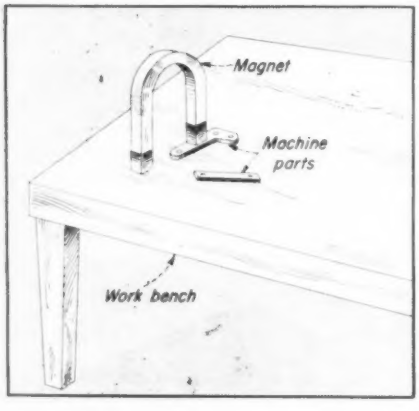
dle, clip, or screw replacement quicker and easier.

However, on some types of shuttles with height adjusting screws through the spindle base, it may be difficult to hold the spindle down to the required depth when putting in the spindle screw. In this case, an improvement can be made by placing a height-adjusting screw through the tool. Screwing downward upon the screw will force the spindle base down so that it can be readily lined with the spindle hole through the shuttle. On this spindle, the tool end must have the hole to slip over the end of the spindle and downward to the spindle base. *(K-343)*

Magnet Picks Up Small Knitting Parts

Many knitting-mill mechanics, when working on the assembly of certain knitting motions, often find that picking up the small nuts and screws presents a problem of minor difficulty. Many of the parts are flat; and when they are placed on a flat surface, quickly picking them up again requires good fingernails.

The writer has occasion to work with machines which have small, flat parts, and has found that using a small magnet to pick them up often helps to speed up handling and repairing certain motions. The sketch shows a magnet with a small machine part adhering to it. If the parts are magnetized, it would prove impractical to use a magnet; but most textile machine parts are not. *(K-363)*



A magnet for picking up small parts will aid the knitting fixer with a sore finger or short fingernails.

Trucks Simplify Handling of Picker Laps

It is customary in many mills to stand picker laps on end upon the floor when the pickers are doffed and transfer them to a large truck or wagon when needed in the card room. This practice entails extra handling of the lap, subjecting it to added danger of being torn, and causes the width of the lap to sag toward the floor. As a result, the layers of the lap often split as the lap unwinds on the card.

A simply constructed lap truck can be used to avoid unnecessary handling of the lap. The truck should: (1) be small enough for easy handling; (2) hold enough laps so that too many trucking trips to the card room will not be necessary; (3) be sufficiently compact to permit storing the normal overflow of laps on the picker room floor. A large number of trucks will be necessary to accomplish this last requirement; but over a period of time, the saving in waste will pay for them.

The base, a, of the truck should be a rectangle approximately the length of a picker lap and about twice the width of a lap's diameter. Lengths of a 2x4-in. timber may be used to build the rectangle. Mount the base on four wheels, *b*, placed in the manner of the wheels on a roving box.

At each corner of the base, fasten a 2x4-in. upright, c. Complete a rectangle at each end of the truck by joining the tops of the two uprights with a piece of 2x4 lumber, *d*. For additional support, secure a brace in the center of the end rectangle. Small steel rods, e, placed diagonally from the top of one end to the bottom of the other will brace the truck lengthwise and keep the row of laps on one side separated from the row on the other side. Since it will not damage the laps to press against the steel rods, the uprights, c, may be placed an inch or two inside the corners of a for better balance.

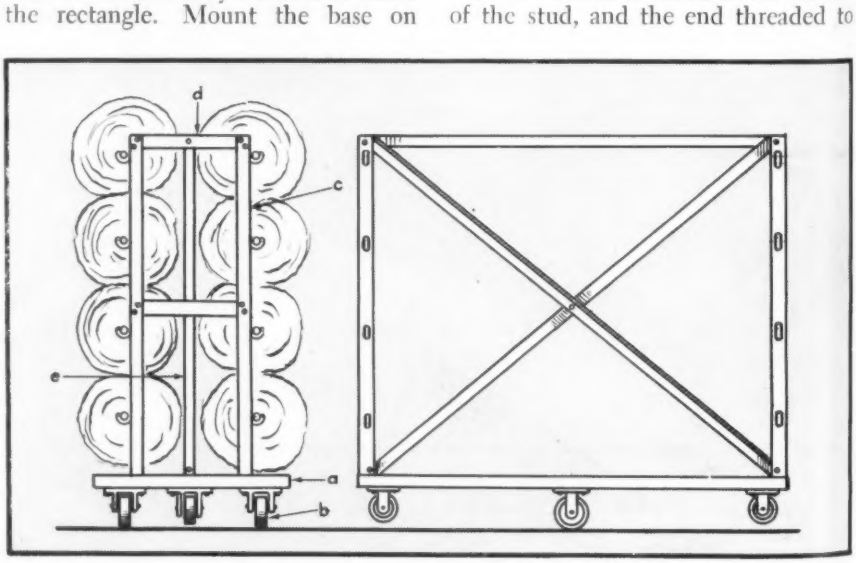
Fasten hooks for holding the lap pins to the outside of c at intervals approximating the diameter of a lap. The hook upon which the head of the lap pin will rest should have a slot to receive the pin head. This prevents the pin from sliding out of the lap if pressure should be accidentally applied to the other end of the pin. *(K-354)*

Harness Sheaves Oiled While Still on Loom

Proper oiling or greasing of studs and harness sheaves requires that the entire assembly be removed from the loom and taken apart. Because of this condition, satisfactory lubrication is sometimes overlooked. The results are improper shedding caused by binding or worn studs, and unnecessary work and parts replacement later.

To overcome this condition and render the lubrication of the sheave assembly a routine operation, we have devised the following method:

A $\frac{21}{64}$-in. hole is bored in the center of the stud, and the end threaded to



The truck should be high enough to hold six or eight picker laps.

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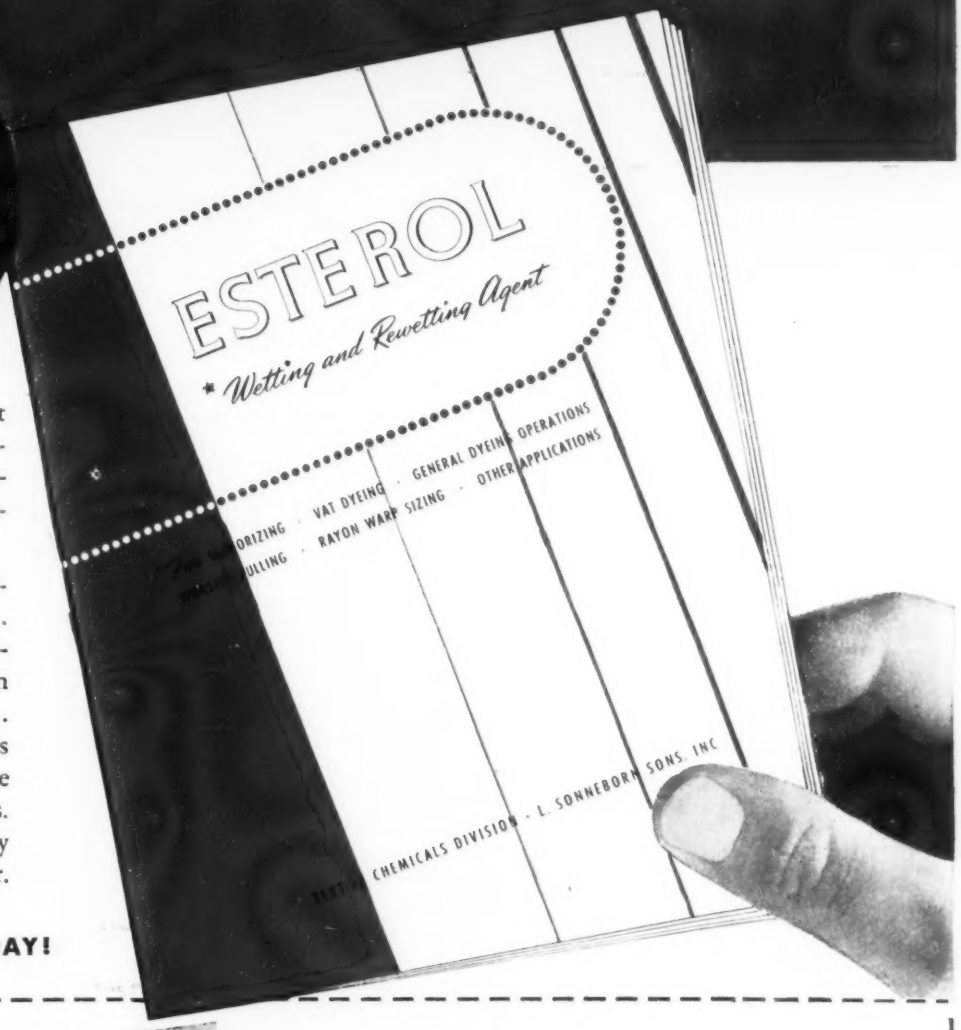
NEW TECHNICAL FOLDER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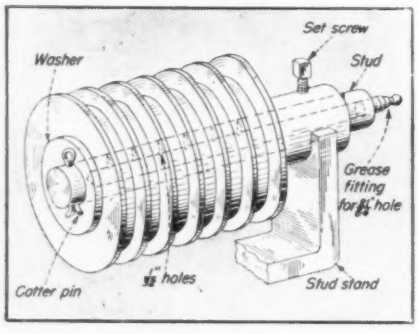
KINKS & SHORT CUTS

(Continued from page 146)

take a grease fitting, as shown in the sketch. This hole runs lengthwise from the back to about ½ in. from the front end. In no case is the hole bored the entire length of the stud. At the central point of contact with each sheave, a 5/32-in. hole is bored from the top of the stud to the center 21/64-in. hole.

When the sheaves are assembled and put on the loom, they can be greased easily with a pressure gun without further manipulation. If they are greased each time a warp runs out, the sheaves receive a sufficient amount of grease for efficient running. *(K-355)*



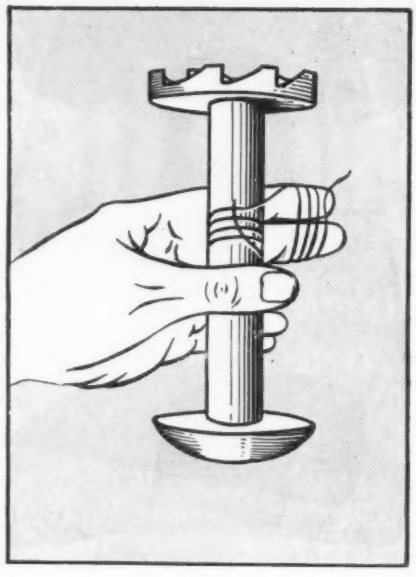
This method for oiling harness sheaves may be used on cam or dobby looms.

Tangled Braider Thread Eliminated at Spooler

We had a problem of making parachute shroud line on carrier machines that have only one stop motion and could not be backed up to untangle the thread-end in the apex of the braid when a bobbin ran out. A ring stop motion was tried on one machine, but so much time and work were required to make the stop motions and fit them to the machines that their use was impractical. To solve the problem without making any mechanical changes, the following method of spooling the yarn in the process prior to braiding was worked out.

The yarn was started on the bobbin in such a manner that when it ran out and the frame knocked off the end of the thread would still be on the bobbin. This was accomplished by "trapping" a length of thread near the end which would wind off without tension, allowing the knock-off weight to drop as though the bobbin had completely run out.

To do this, the bobbin is held in the left hand, if the person is right-handed, and the thread is lapped over the thread-end four times. Holding the bobbin between the thumb and the base of the fore and middle fingers, with the fingers extended, loop the thread four times around the ends of the two fingers. These loops are picked off the fingers with the right hand, and the bobbin is rolled slightly toward the end of the fingers of the left hand to bring the loops against the bobbin. While holding the loops against the bobbin with the fingers and thumb, the thread is wound around the loops several times to hold them. The bobbin is then placed on the winder with the thread under tension. *(K-348)* Peter A. Smith.

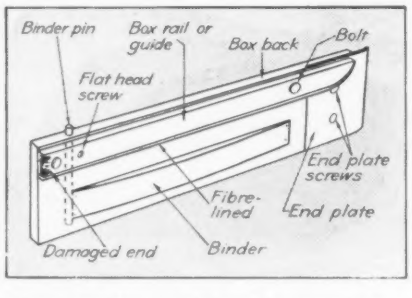


Loops of thread around the fingers provide tension-free "trap" for making the braider knock off while the end of the yarn is still on the bobbin.

Damaged Box Rails Salvaged With Screw

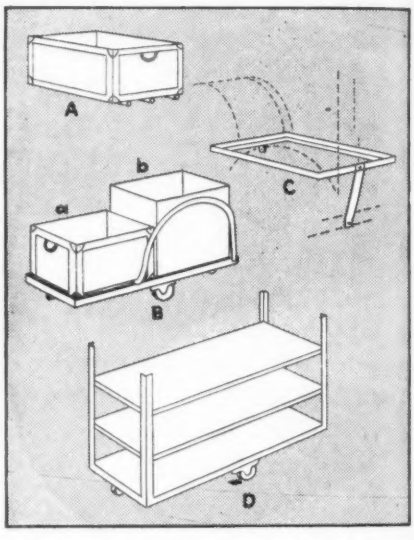
Box rails or guides that have been damaged on one end as a result of frequent tightening of the bolt when adjustments are made can be salvaged by the following method and used for an additional number of years.

Drill a hole large enough to take a 1-in. flat-head wood screw through the guide on the end that has been damaged by the bolt head pulling through. Countersink the hole so that the screw head is slightly below the outer surface of the guide to prevent the picker stick from striking the screw head. When putting the box rail on the loom, place the screw in the hole and screw it into the side of the box. Care should be taken to drill the screw hole far enough from the splintered bolt hole to assure undamaged wood for seating the screw. *(K-351)*



Countersink the wood screw to prevent damage to the picker stick.

Doffing and Handling Designed to Save Money



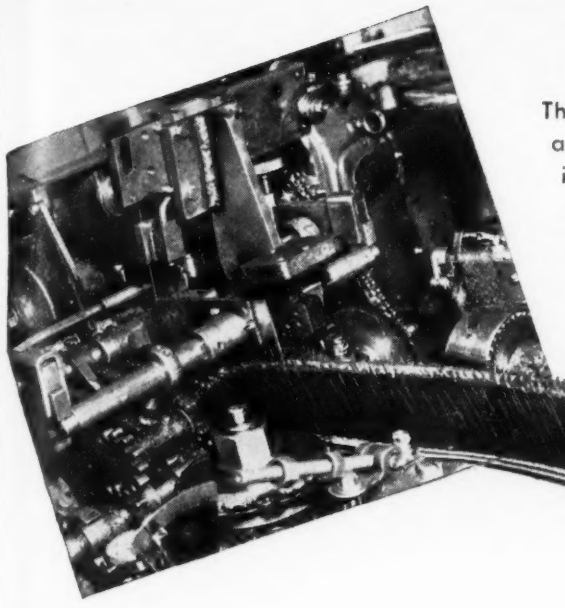
Doff box of filling is transferred to loom.

The usual practice of dumping doffing boxes into large roller boxes and then transferring bobbins from these roller boxes to winder frames or looms results in unnecessary handling. Realizing this, I designed the equipment shown for handling spinning bobbins. It has saved us much time and quickly paid for itself.

The box *A* is made of fiber board reinforced with wood and iron. It is approximately 21 in. long, 14 in. wide, and 12 in. deep. In the spinning department it is placed on the front of the truck *B* and the filling is doffed into it from the frame. The box *b* holds the empty bobbins.

The rack *C* is bolted to the loom arch just behind the battery with one brace in front fastened to the friction gear guard and another at the rear attached to the motor stand. The box *A* full of filling is set in this rack, where it is easily reached by the weaver or battery hand. The truck *D* is used to transfer the boxes from the spinning to the weaving departments and vice versa. Each of its three decks holds four boxes, or twelve in all. *(K-224)*

FULLERGRIPT BRUSH STRIPS
are made on a machine like this..



The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated ①. Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

FULLERGRIPT has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.

COTTON MILLS *can re-brush their* FLAT CARDS *with* **FULLERGRIPT BRUSH STRIPS** - which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

Over 6000 Cotton Cards are equipped with our brush sets and are doing a better job of cleaning card clothing.

This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. ② Sand-paper the roll. Apply two coats of black shellac. Drill screw holes on 8" centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

EVERY WEEK some *COTTON MILL* in the United States installs one or more sets of *FULLER FLAT CARD BRUSH STRIPS*

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Efficient Warping of Rayon

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Between Breaks

Maximum production at the warper and freedom from warping seconds are at the mercy of the supply packages in the creel. No other type of supply has been able to supplant the Universal cone, because it contains the maximum amount of yarn in respect to the space it occupies . . . it can be magazined to provide a continuous supply . . . and it contains *only* yarn that has been carefully inspected.

In one mill warping 150 denier yarn, 750 ends per warp, the yarn broke at the rate of 1 break per 6000 yards of warp. That means 4,500,000 yards between successive breaks on the same end.

Supplying creels with rayon cones wound on the Universal precision winding machine is the best way to insure an uninterrupted supply to the warper.

In addition to the advantage of being magazined, the Universal rayon cone is compact . . . uniform in density . . . and will deliver yarn without imperfections under minimum tension.

Universal Winding Company, Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta. See 10-page catalog in TEXTILE WORLD YEARBOOK.

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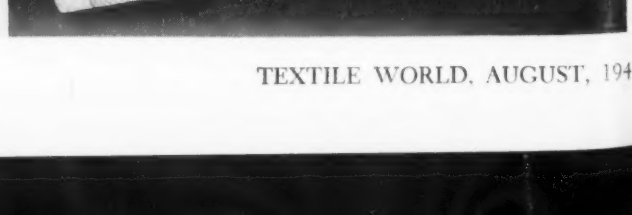


LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete and Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

Training for the Older Help

Should experienced hands be given aptitude tests and schooling from time to time to prevent their losing interest?

WELL, GLAD YOU ENJOYED YOUR VACATION, PETE. EVERYTHING WENT SMOOTHLY HERE WHILE YOU WERE GONE. WHAT DID YOU DO?
OUTSIDE OF A LITTLE FISHING 'BOUT ALL I DID WAS TO VISIT A MILL WHERE I SAW THE BEST IDEA I EVER SAW. BOY, DO WE NEED APTITUDE TESTS AND SCHOOLS FOR OUR OLD HELP.
1
APTITUDE TESTS AND SCHOOLS FOR OLD HELP? PAL, YOU MUST HAVE BAKED YOUR HEAD IN THE SUN.
THAT'S RIGHT. YOU SEE, THIS MILL DOESN'T BELIEVE IN LETTING IT'S HELP THINK THAT THEY ARE FORGOTTEN. REMEMBER THE PSYCHOLOGY ABOUT THE "FORGOTTEN MAN"?
2
PSYCHOLOGY, THAT'S A LOT OF BUNK. ALL YOU NEED TO RUN A MILL IS SYSTEM AND DRIVE- LOTS OF DRIVE AND LOTS OF WATER AND LOTS OF SYSTEM. WHEN I WAS OVER AT....
YEAH, EVERYBODY KNOWS THAT STORY. BUT THIS MILL I VISITED SENDS THE OLD HELP TO SCHOOL AND GIVES 'EM TESTS PERIODICALLY, PRODUCTION HAS SHOT UP. THE FOLKS BELIEVED THAT THEY HAD A CHANCE TO IMPROVE THEMSELVES, AND THEY DID.
3
PETE, MY FRAME HANDS CAN'T BE BEAT ON PRODUCTION AND THEY'VE BEEN HERE SINCE ADAM. OH, HERE'S JOE, GOT SOMETHING FOR US, JOE?
YEAH, WEEKLY PRODUCTION REPORT. SUPER RAPS YOUR DEPARTMENT, BILL. SAYS, "PRODUCTION DECREASED ONLY 10% THIS WEEK... CONGRATULATIONS"
THERE - MR. READER - AM I RIGHT OR WRONG?
4

Letters From Readers

Votes for Informal Conference

"A Conference, or Just Fish Stories"
(Pete & Bill, June 1945)

Dear Pete & Bill:

Line me up with Bill, for I believe the conference method for overseers' meetings makes for stilted and confined discussion.

True some deviation of subject is unavoidable when the meeting is run informally, but it seems to me that the fellows with the helpful suggestions and bright ideas are going to get them over anyway—with a whale of a lot less strain when the session is free of cramping regulations.

I've sat in on a great many similar get-togethers, and have found much more ground was covered when the gathering was not inhibited by methodical direction. (PB601)

Education Not Teacher Is Important

"Overseer vs. Outsider as Teacher"
(Pete & Bill, Mar. 1945)

Dear Pete & Bill:

An ambitious person who seeks education is not particular as to who is his teacher. Obviously, then, an overseer should not treat the matter of teaching the employees as the least bit out-of-bounds. On the contrary, he should get the proper insight and realize that by offering his services after duty-hours for the benefit of workers he is really tightening the bonds of friendship. This tends to bring about a more cooperative spirit at all times. The closer the understanding between labor and management the smoother the production line will be. Thus, an aggressive overseer-teacher is a definite asset to management.

A state vocational director and his staff are undoubtedly expert in their profession. Yet, an overseer's teaching might easily overshadow the educator's

MEMORIES OF OLD MAN CARELESSNESS — By Martha B. Pittenger

No. 29—Jack and Jill

Jack, the doffer, was resting in the yard smoking house, with some extra quills in his hip pocket. After resting and talking, he went up the stairs back to the spinning room to make the last doff before going home. While he was going upstairs, a quill fell from his pocket and was left lying there. Jack didn't take time to pick it up; he thought he would do so if it was there when he went home. Or maybe someone else would pick it up, I suggested to him hopefully.

No one did pick it up and it was *not* there when Jack went down on his way home. For the timekeeper had started down the stairs in something of a hurry, as she, too, was on her way home. Yet she had a slight delay, for she stepped on that quill and was thrown the rest of the way down to the landing.

It was almost a miracle that none of her bones were broken. However, she did receive severe bruises during the fall and was off from work for three days, thanks to the work of one of my pals.

Timekeepers were difficult to get, so this job was crippled while the victim recovered. All because of a small mistake—the mistake of not thinking and doing one's duty, the kind of thing I encourage. You might say the accident just fell out of that doffer's pocket.

job simply because of the former's more friendly understanding of his workers. Pursuit of education outweighs personal feelings. (PB606)

Avoid Too Stringent "Sick-Leave" Rules

"The Chronic Absentee"
(Pete & Bill, Jan. 1945)

Dear Pete & Bill:

Next to absenteeism, nothing is worse than the "shell" worker, who seems to have left all pep, initiative, and enthusiasm at home, while he sent only the "shell" of his real self to the mill. He is responsible for lowered production, and causes far more than his share of errors and accidents.

But the management may find it has had a part in bringing too many of these employees into the mill, through excessively tough attitudes about sick leave. Thus a worker may drag through a whole week at 70% efficiency, when a day at home would have put him back on the job at his very best. Beyond any question, some persons take advantage of every thing given them by the management, but wouldn't it be fairer to watch those few carefully rather than punish all employees by setting up too stringent sick-leave rules?

To have a worker at the mill is fine as far as it goes. However, if he is only the "shell" of the efficient person he should be, a review of sick leaves may disclose he is not solely to blame for this condition. (PB603)

Books of Interest

Report of Research on Spun Rayon Warp Sizing

Spun Rayon Warp Sizing; Textile Research Institute, Inc., 10 East 40th St., New York 16; 91 pages; $1.50.

The introduction of synthetic staple fiber in textile mills has created new problems in processing methods; outstanding among these is warp sizing. The results of a confidential research project upon the sizing of yarns made from spun viscose rayon have been released in this report. Experiments were in terms of existing methods and equipment, and the results suggest some new methods of approach to this problem.

Various factors were investigated such as the effect of stretch in slashing, abrasion resistance of the sized yarns, and the extent of penetration by the sizing material. The comparative efficiency of various sizing agents was determined, and the relationship between the weaving efficiency of sizing materials and the mechanical properties of films made from these materials was studied.

Guide to Settlement of War Contracts

How to Speed Up Settlement of Your Terminated War Contract, by J. K. Lasser; McGraw-Hill Book Co., 330 West 42nd St., New York 18; 179 pages; $3.50.

Busy executives of both large and small textile plants that have war contracts will do well to check over this book as it gives instructions in detail, including correct settlement forms, as to the various steps that must be followed when their war contracts are canceled or curtailed. Also included is a section telling subcontractors just how to proceed and how to get maximum protection. This is another of the many books that the author has prepared on taxes and related subjects and which have been widely used by business men.

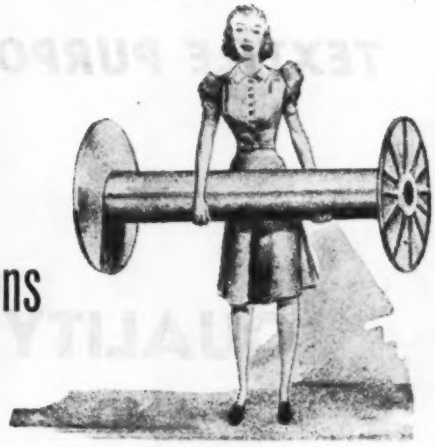
Other Publications

Opportunities for Trained Men and Women in the Textile and Related Industries; The Textile Foundation, Kent, Conn.; 12 pages.

The Industrial Nurse and the Woman Worker, by Jennie Mohr; United States Government Printing Office, Washington, D. C.; 47 pages; 10¢.

wear and tear goes out when magnesium goes in

—and the metal of motion speeds textile operations



Magnesium is "made to order" for the moving parts of textile machinery. Its light weight—a full third less than that of aluminum—means low inertia . . . and that means smooth, high-speed operation with less vibration.

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The textile industry is thoroughly familiar with the importance of these factors in machine parts —especially in those requiring intermittent or reciprocating movements at high speeds. Magnesium is the answer: weaving, knitting, spinning, twisting and winding operations alike benefit from the Metal of Motion.

If you want detailed technical information on the advantages of magnesium in textile operations, get in touch with Dow, pioneer producer and fabricator of this lightest structural metal.

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Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Steward Versus Overseer

I've just read your editorial, "Steward Versus Overseer," in the June issue, and must agree with your thinking; but am also anxious to report my own experience on the same subject. The union higher-ups definitely want to drive a wedge between the overseer and his people and would like all contracts to prohibit any grievance contacts between worker and overseer. The obvious objective is to elevate the steward to overseer level, or even beyond, in the eyes of the worker.

On the bright side, however, we usually have intelligent and practical local union representatives and business agents, whose word is law locally, regardless of national officers. These men, particularly the one with whom I deal, want to preserve the overseers' dignity and complete control over his people, including the steward. The really smart ones want grievances settled at the foreman level, and figure that the fewer grievances that reach a higher plane, the better.

Relationships between union representatives and industrial-relations men, as well as between overseers and stewards, are a great deal more prac-

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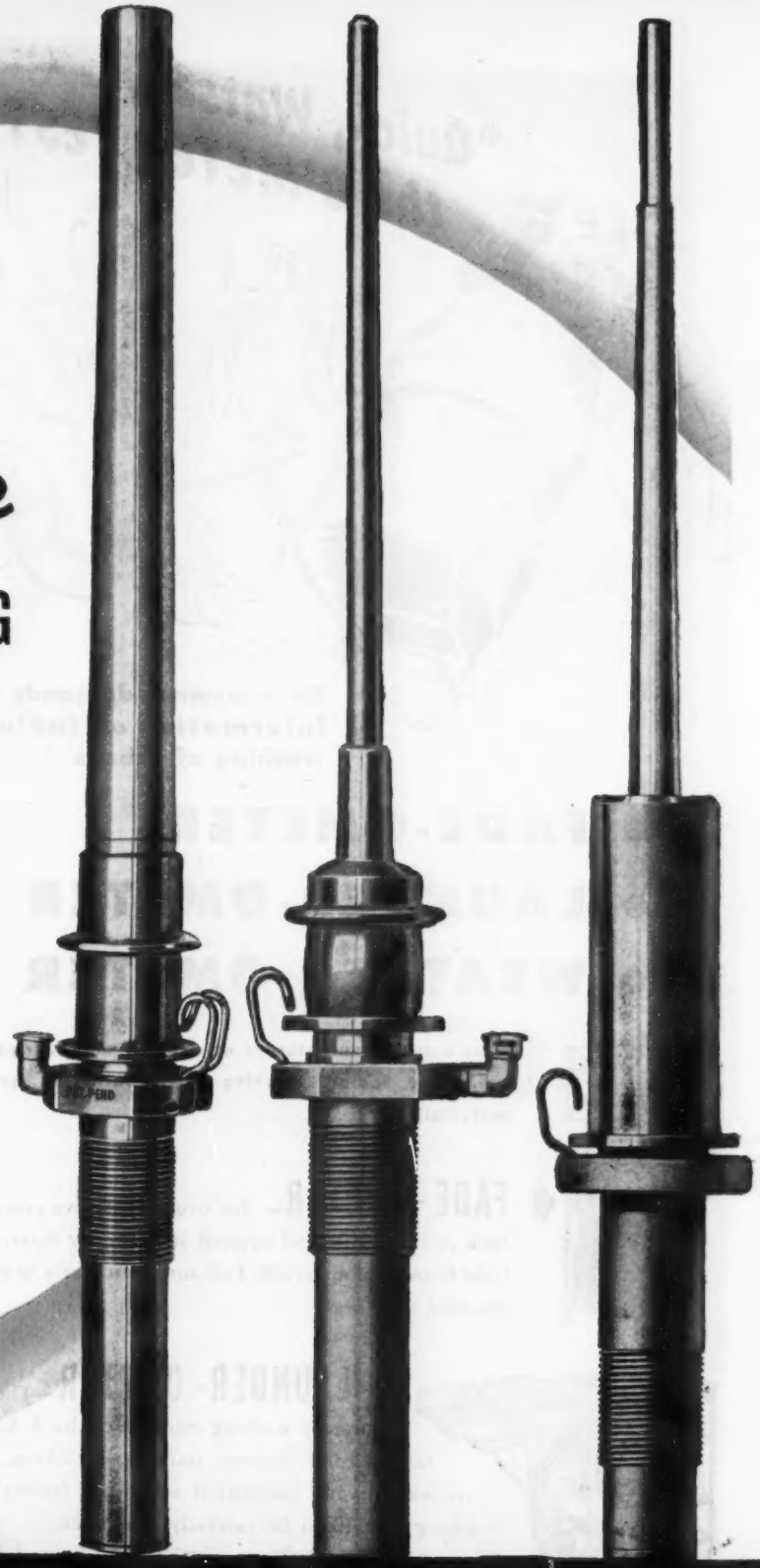

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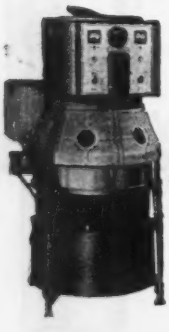

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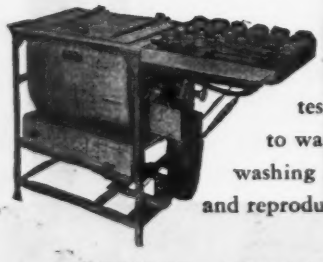

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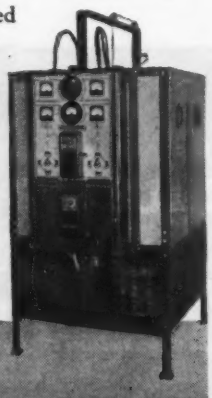

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Originators and sole manufacturers for over a quarter of a century—Fade-Ometers, Weather-Ometers, Launder-Ometers; the accepted standard accelerated testing machines used all over the world.

tical, peaceful, and understanding in nature than one would be led to believe in reading statements and listening to speeches of national union heads. As you so clearly state in your editorial, the most important thing is down-to-earth mutual understanding between management and labor, which, if carefully maintained, goes far toward the elimination of petty attitudes and distrusts. *(R-164)*
Norman F. Walthers

New Fiber Sorter Is Being Developed

EDITOR'S NOTE: Several inquiries have been received in regard to the statement, "Better and more rapid methods of obtaining fiber-length values than by the drop-comb method are now available." (TEXTILE WORLD, May, page 123). The question was referred to the author, and the following answer was received:

The statement made in the May issue that "better and more rapid methods of obtaining fibre-length values . . . are now available" should be qualified by the addition of the words "to a very limited few."

The limitations can be blamed on war restrictions and other kindred causes. No reference was intended to any electronic device for fiber-length determinations. The principles employed by these laboratory instruments are apparently correct, but there are reasons why an abstract diagram of fiber-length properties will never be considered as valuable to the operating mill man as a well-laid fiber array.

Drop-comb fiber sorters present the following objectionable features in actual mill work:

The time required to make a determination is too great. This limits the number that can be made in a reasonable length of time.

The precise measuring and weighing of each length group affords opportunities for many personal errors.

There is stretch and crimp removal in the stronger fibers, breakage of the weaker fibers, and masking of short fibers by longer fibers.

Variation in techniques and personal traits of different operators make duplication of results from the same specimen almost impossible.

The improved type of sorter overcomes all of these faults. The time required is only a fraction of that required by the drop-comb method; and there is no stretch, breakage, or masking. The maximum classified and mean lengths are indicated directly. No weighing of length groups is re-

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Becco engineers are experts in all branches of textile bleaching. They will be glad to survey your plant facilities and equipment and make recommendations as to how plant practices may be improved and costs reduced. They will be glad to tell you truthfully whether your volume justifies the investment required for the installation of continuous bleaching. They will advise you as to the best and most suitable process, equipment and chemicals to use to most economically suit your requirements.

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Maybe *your* business isn't like this. Maybe it is. A lot of them are. Anyway, here's this jobber's story:

He stocks a standard line of precision bearings—a big investment. If he had to carry *all* special types and sizes, his investment would run into a nightmare of high-cost slow-turn "specials."

So in order to give 100% service, what does he do? Simply this. When a customer wants a "special", the jobber wires the manufacturer and has the order shipped Air Express. Same-day delivery is often made on orders placed early in day.

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quired. The sorter may be used for waste analysis and direct nep count of arrayed specimens. The technique is so simple and easily learned that duplication of results from the same specimen can be obtained within small percentage tolerances. Promises have been made that the new sorter will be commercially available soon. *(R-165)*

Visits Among Mills Should Be Encouraged

I want to raise a point of order on the reluctance of some managements to encourage the exchange of visits among men from different mills. I happened to work at one time with a group of mills which felt pretty strongly about this idea. The president was unalterably opposed to outsiders coming into the mill. In fact, he was so strongly opposed to visits that the three or four superintendents in his group of mills were afraid of the visits of salesmen.

The result of this fixed policy on the part of the general management was that the superintendents individually came to view their own particular plants in the same light. In every way, they placed obstacles in the way of inter-plant affairs and not only did not visit among themselves to discuss common problems, but also retarded company progress and business. For example, on any consideration concerning new orders, etc., they would always attempt to maneuver a "bad" order into another mill by protesting that they were not set up for it.

If this policy is a fallacious one for the individual company, it is doubly so for the trade in general. While I would not suggest that mills with intensive research programs throw wide the doors on purely private affairs, I believe that in general matters of mill practice, they should encourage the visits and inspections of outsiders. Frequently one can obtain a fresh and invigorating idea or point of view from someone who knows nothing about the details of a particular problem. Not only that, but also if a mill actually wanted to submit a particular problem to an expert mill man and did so in writing without allowing him a personal inspection, it is difficult to believe that this expert would successfully solve the problem. There is a certain something in a mill that the practical man senses, feels, or "smells" when given an opportunity to inspect it. And the years ahead are going to

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require cooperation and hard, coordinated effort on the part of the entire industry; and the more exchange of information there is among the practical production men, the better prepared we will be for these years. It is good to note that your publication, TEXTILE WORLD, is in the vanguard of this thinking for the future. The recent editorial by your publisher, Edwin D. Fowle, suggesting income insurance is exactly the type of coordinated effort that the industry needs. Let us also coordinate the efforts of our production men by encouraging them to visit other mills and to receive visitors. *(R-167)*

Norwegian Textiles Suffer From Occupation

Perhaps it will be of interest to read a little about the textile situation in Norway.

Before the war, Norway produced about half the wool consumed in the country, but produced no other textile materials except shoddy and a small quantity of rayon. Of the cotton yarn consumed, the greater part was spun in England or on the Continent, and only a small part of it in Norway. With combed woolen yarns, it was the same; the greater part was imported.

In April, 1940, all such imports were stopped. The only materials we could get were rayon from Germany, Belgium, the Netherlands, and Switzerland, and rayon fibers and yarns from Germany. To be exact, we did also get a small quantity of cotton yarn from Finland. The result has been, of course that production in the Norwegian textile factories was reduced more and more, and clothes have grown more and more scarce. I believe that Norwegian people five years ago were generally very well clad, but I doubt that the same can be said today.

The situation now is that we hosiery manufacturers and weavers look forward to the day when we can get cotton yarns and combed woolen yarns again, so that we can supply our customers with good clothes; but because of the scarcity of foreign currency, it is to be expected that imports will have to be rationed for a long time yet. We are lucky that the textile factories have not been destroyed by war accidents; but replacements of old machinery have taken place only in the first or second year of the war, and only occasionally then. *(R-166)* *M. J. Stephansen, Bergen, Norway*

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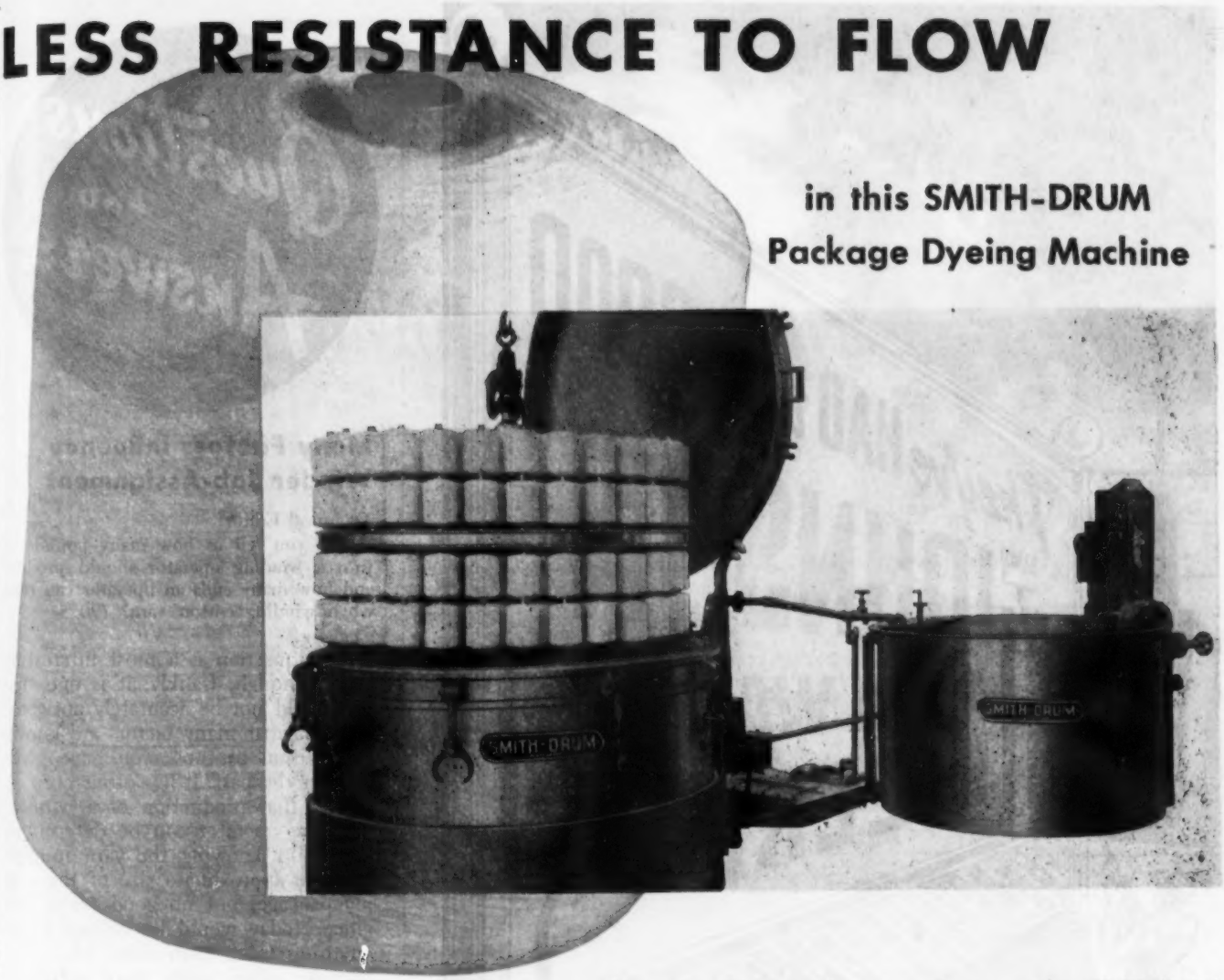
in this SMITH-DRUM Package Dyeing Machine



Increases volume of liquor through each package by 276%

Smith-Drum engineers were the first to recognize that the larger the volume of dye liquor moved through a package of yarn and the *lower the pressure developed* . . . the faster and more uniform would be the dyeing results. This new principle was developed, for the first time in package dyeing, in the Smith-Drum Package Dyeing Machine introduced a few years ago. An entirely new type of package carrier and a radical departure in spindle design reduced resistance to flow and resulted in 276% greater flow of liquor than permitted by the conventional types of package dyeing machines. Obviously, dyeing efficiency was tremendously increased.

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for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

Questions and Answers

Many Factors Influence Winder Job-Assignment

Technical Editor:

Can you tell us how many pounds of yarn a winding operator should produce and how many ends an operator can tend when winding cotton yarn? (9055)

The question is a most interesting one, although, frankly, it is one that just could not be accurately answered until a great many factors are known in addition to those you have given us. In the past, it has often been assumed that production of a winding machine operator can be determined merely by knowing the yarn number and the approximate size of the supply package; but no good textile engineer today would be willing to do anything more than state what production other mills have achieved, since production depends upon the following, and possibly other, factors:

(1) Whether machine efficiency or operator efficiency is the prime goal.

(2) The average size of the supply package.

(3) The number of breaks, which is largely determined by the cleaner opening and the quality of the yarn being wound.

(4) Whether or not a knotter is used, which is tied in closely with the next item.

(5) The amount of time required for the average hand to piece up a break.

(6) The size of the take-up package.

(7) The amount of time required to doff the take-up package, which is affected at times by adhering strictly to gaging, which also takes time.

(8) Incidental duties assigned to the operator, such as cleaning the machine, racking packages, calling for and delivering work, untangling packages and straightening up work, making out tickets, marking work, and the like.

(9) The amount of personal time allowed each operator.

(10) Fatigue allowances, which

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WELL, WE CAN'T OFFER 'EM MORE MONEY, OR PICNICS EVERY DAY, OR TH' PRETTIEST GIRLS WORK HERE, OR--
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sometimes are confused with or accompanied with the next item.

(11) Incentive margin, if a piece rate is used.

Single Yarn Untwists When Tied To Ply Yarn

Technical Editor:

It sometimes happens that we have to tie warps of 20/2 cotton onto other warps made of single wool yarns. The single yarns, both wool and cotton, are spun with Z twist; while the 20/2 warp is plied with S twist. Hence, when we tie the Z-twist yarn onto the S-twist yarn, the single yarns untwist themselves and become too soft and weak to be pulled through the heddles. The result is hundreds of ends down. The suppliers of the yarn have been requested to supply us with 20/2 cotton plied with Z twist, but they decline to do this on practical grounds.

Is there any way of overcoming this untwisting of the singles? (9050)

At the present time it is very difficult to get cotton manufacturers to supply any person with yarn plied with Z-twist. Even before the war, they were reluctant to do so. Therefore, the writer had to change his woolen warps to S twist, the same twist as the ply. Then no difficulty in pulling the yarn through the heddles was experienced. Sizing the last two yards of woolen warp yarn by hand was tried, and although it helped, it did not offset the time and cost involved.

Organization for Printing Cottons

Technical Editor:

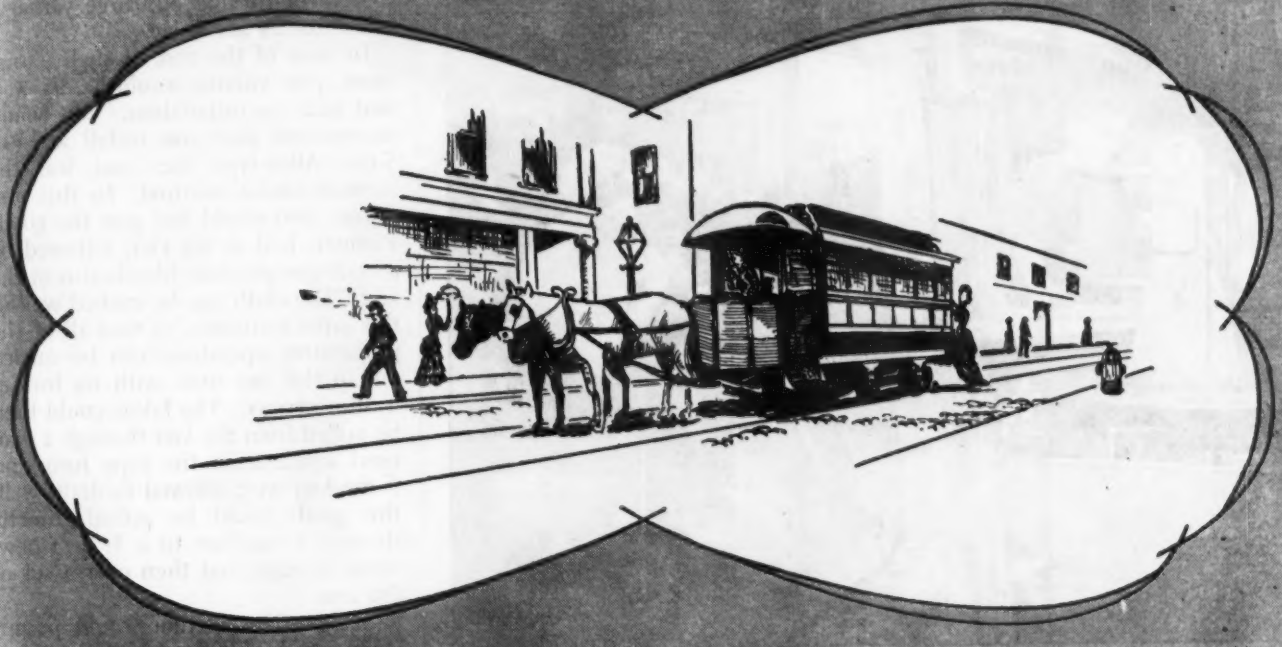
We would appreciate your sending us a list of the machinery required to handle about 50,000 yd. weekly of 40-in., 3.75-yd. cotton sheeting to be printed with three fast washable colors. We understand it would be necessary to bleach the cloth before printing; therefore, please outline the latest and simplest method of bleaching it. (9053)

In the preparation of these goods, it is first necessary to lay them out and sew the cuts together, preferably with a butted-type seam; after which, the next operation would be that of singeing. Before the singer, a scutcher is usually installed to open the goods from the rope form if they are to be pulled any distance. If the cloth can be laid out in open width behind the singer, a scutcher is not necessary.

The goods, of course, must be boiled out and bleached before printing; and there are several continuous methods for doing this which are relatively new. These methods require the installation of J-boxes; chutes or conveyors; pads; and impregnating boxes where caustic

IN 1883 —

Horse Cars Were in Common Use



...and a specialized weaving business was started in Philadelphia by William T. Galey

This subsequently moved to Chester, Pennsylvania, and in 1889 was incorporated as Aberfoyle Manufacturing Company.

Since then, Aberfoyle has achieved leadership in its field, with world-wide facilities for the mass production of mercerized yarns and threads.

During two world-wars—and on a particularly large scale during this war—we have had the privilege of supplying yarns for the clothing and equipment of our fighting forces, and in so doing have put to the hardest test the quality of our products.

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ESTABLISHED 1883

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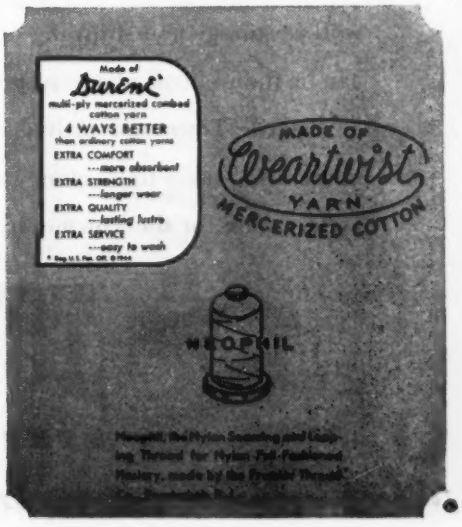

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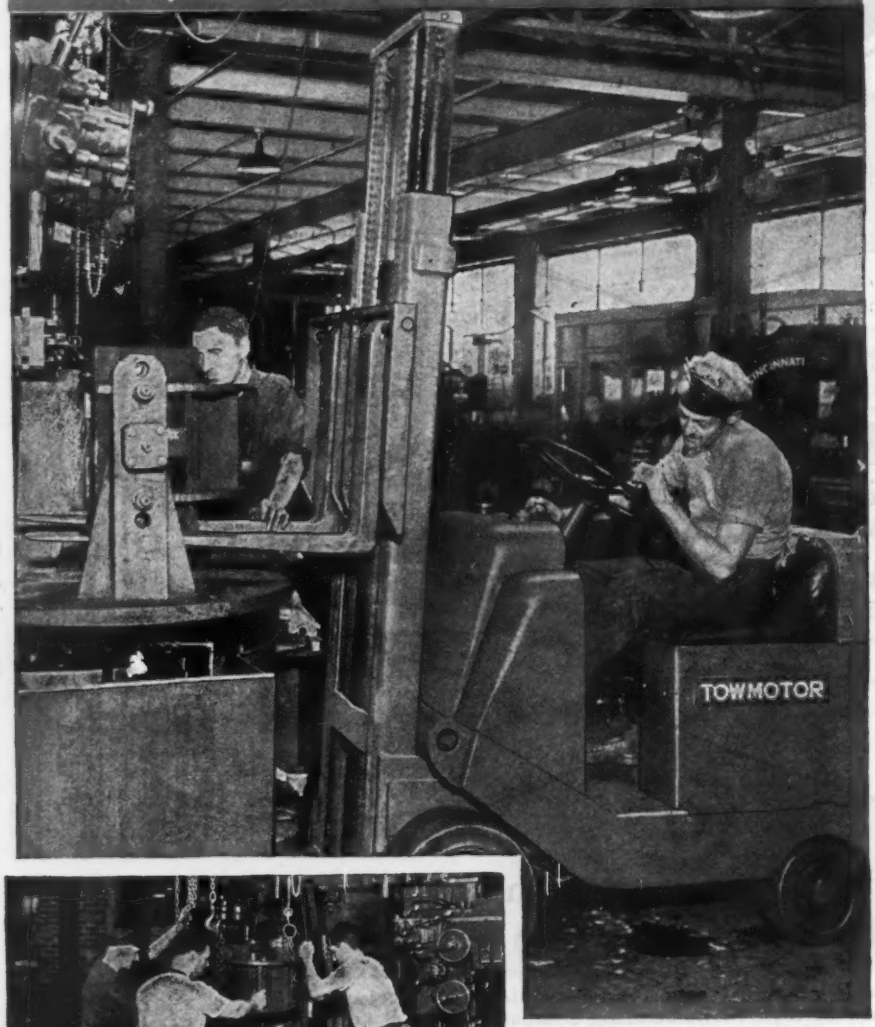
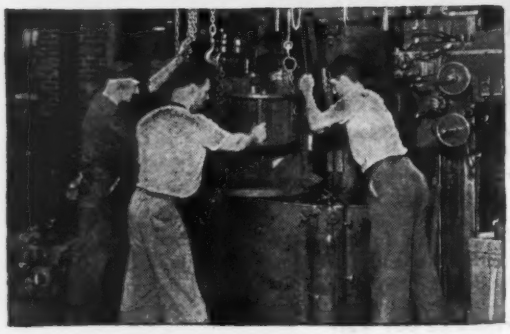
HANDLING—the Common Denominator of PRODUCTION





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soda for the boiling-out or scouring of the cloth and an oxidizing agent for bleaching, wash boxes, etc. are applied. Steam is introduced into the J-boxes, chutes, or conveyor-belt enclosures. Such an installation requiring stainless steel for various parts is apt to be somewhat expensive, but the units are capable of turning out large yardages when run 24 hr. a day.

In view of the cost of such equipment, your volume would hardly warrant such an installation. We would recommend that you install a 4- or 5-ton Allen-type kier and use the peroxide-bleach method. In this procedure, you would first give the goods a caustic boil in the kier, followed by a hydrogen-peroxide bleach also in the kier. The cloth can be washed well in this same container, so that all of the preparatory operations can be carried out in this one unit, with no further wash necessary. The fabric could then be pulled from the kier through a two-bowl squeezer in the rope form; or, if the kier were allowed to drain well, the goods could be pulled directly through a scutcher to a 3- or 5-bowl water mangle, and then over a set of dry cans.

Such an installation would permit you to boil 25,000 or 30,000 yd. per kier one day, followed by the peroxide bleach and washing the second day, thus permitting you to prepare 50,000 yd. weekly with ease. You would also have additional capacity were it so desired.

In the printing department, we would advise you to install one 6-color print machine. You can run more than three colors on this machine or utilize weep or crush rolls if the color combinations require them. On the entering end, a series of revolving lint brushes should be placed, since these are very helpful in preventing lint from carrying over into the color boxes and causing snaps and doctor streaks.

In your color shop, two paste kettles of approximately 200-gal. capacity, steam-jacketed and with revolving agitators, would be desirable. Perhaps you could get along with one, depending on your printing schedule and colors.

You would also require one ager of a type resistant to acid fumes, for we presume you mean by fast, washable colors such types as the vats, rapidogens, indigosols, naphthols, and pigments. A high-speed agitator or stirrer is very useful to cut color into printing pastes, as well as for mixing pigments and resin binders. A 5- or 6-compartment open-width soaper, preferably with another set of dry cans at the delivery end, is desirable for soaping

Exacting

...to the last detail

Where her appearance is concerned nothing escapes the attention of a fashion-minded woman. Because of this fact, fashion creators must be exacting about every last detail!

And that exactness explains why so many leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C.P.P. soap or synthetic detergent for every fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C.P.P. processing agents made for the textile industry. Or, write to our Industrial Department at Jersey City 2, New Jersey.

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off and developing the printed goods.

A 2-bowl starch mangle, synchronized with a 60- or 90-ft. tenter frame, enclosed and heated, provides a method for applying finishing materials, drying, and setting the cloth to width at the same time. We assume the sheeting is not to be shrunk, so a 5-bowl plain calender with one or two of the metal bowls heated, if necessary, should enable you to obtain a variety of finishing effects. Depending upon the put-up, whether flat fold, double and roll, or on rolls, you will need either a yarder, a double and roll machine, or a winder.

We realize that with only 50,000 yd. a week, some of this equipment will be standing idle at various times, even on single-shift operation. Such a set-up does give you the ability to expand your production as the occasion warrants and to run more yardage at any given time to meet an unusual production condition.

More Enzymes Used Now Than in Peacetime

Technical Editor:

What is the current poundage of enzymes used in the textile industry? (9061)

Enzymes are used in the leather, paper, textile, and starch industries for starch conversion, manufacture of syrups, and other purposes. There are two types of enzymes used in the textile industry, powdered and liquid. Of the powdered enzymes, perhaps at the present time the most extensively used are Rhozyme DX, Neozyme, and Katazyme, although there are a number of other powdered products used in a more or less crude and unbuffered condition. Of the liquid enzymes, the three most widely used are Diastafor, Exsize, and Rapidase.

Powdered enzymes can be classified as being either proteolytic or diastatic enzymes, each having certain properties for splitting the starch or digesting any protein material in the fabric; and they each vary in enzyme strength according to the type of manufacture with, of course, the cost varying accordingly.

In reference to the liquid enzymes, practically all will come under the malt and bacterial types; but here again, some are sold with different strengths and have different costs. Because of the differences in the actual enzyme value of these various desizing agents, it is rather difficult to give even an approximate figure on the total amount used in the textile industry.

The powdered enzymes will range anywhere from five to ten times the

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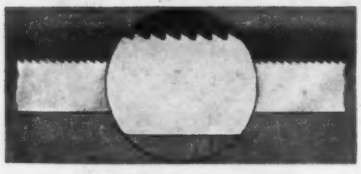
To Clean and Reseat Slots *in Sinker and Divider Heads*



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No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

Other Products

Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

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We restore worn cams, gears, rollers, and many other textile machine parts to their original size and shape. Satisfaction guaranteed.

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strength of the ordinary liquid enzymes, although certain of the bacterial liquid enzymes are relatively high in strength. These, too, are sold in varying enzyme concentrations.

For an estimate, we would say that the amount of powdered enzymes used in the textile trade at present would be about 2,000,000 lb. or more per year, while the amount of liquid enzymes used in textiles would be about 15,000,000 lb. or more. Whatever the actual amounts, they would not represent the normal amounts used in peacetime, because at present a high percentage of all enzymes used are for government fabrics which are heavily starched and heavily weighted. These take much greater amounts of enzymes than peacetime requirements.

Basis for Figuring Up-Twister Production

Technical Editor:

I have come across a problem with which I hope you can lend some assistance. One of the machine companies making twisting machines uses the raw yardage of a given denier of rayon to figure weekly spindle production of the up-twisters. I have always figured on the crepe yardage for spindle production, which naturally gives a considerable difference in results. Which is the correct way to figure the production and why? (9047)

This problem which you present is an interesting one and one that has confused many rayon throwsters. You want this information in order to figure correctly production and efficiency from up-twisters. For these purposes, the only fair denier to take is the denier of the twisted yarn as it is found on the take-up spool. The reason for this can be more easily understood if the twisting machine is visualized as a device for inserting turns in the yarn rather than a machine for producing pounds of yarn.

You refer to a chart produced by one of the machine companies making twisting machines in calculating machine production per spindle. We do not know exactly which chart you refer to, but one of the more complete charts produced by the producers of up-twisters gives the poundage production in deniers in units of ten deniers each. The purpose for this was to permit the user to calculate his production from the actual denier found on the take-up spool. That was the reason for giving the figures in units of ten deniers since rayon yarn, of course, is not made except in a relatively few specific deniers, such as 75, 100, 125, 150, etc.

There have been some condensa-

SYLVANIA NEWS
TEXTILE EDITION

AUGUST *Published by* SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass. 1945

NEW DAMP-PROOF INSTANT START LAMPS OPERATE CORRECTLY DESPITE HUMIDITY

TEXTILE mills overcome certain problems inherent in manufacturing cotton thread by humidifying the air to a very high degree.

Many modern plants are fully equipped with fluorescent lighting — for greater production and improved quality — and since many are contemplating installing *instant start* fluorescent lamps, these high humidity conditions tend to create another problem.

The usual starting method for fluorescents involves an inductive surge of about 1000 volts. This is sufficient to ionize the column of gas in the lamp after the cathode has been preheated for a few moments.

However, in the instant starting circuit there is no inductive surge, since the circuit is not opened by a starter, but sufficient voltage must be supplied to start the lamp (about 440-450 volts for a 40-watt lamp).

Under these voltage conditions ordinary instant starting fluorescent lamps may not start at all if a high humidity prevails — since a film of moisture on the outer bulb wall may prevent ionization and proper starting.

Sylvania Electric has overcome this problem, and has developed a 40-watt fluorescent lamp with the exterior surface of the glass tube coated with a special hydrophobic coating that prevents the formation of a moisture film. This coating cannot be detected visually, will not rub or scratch off, and in no way affects the light output of the lamp. (Note photograph below.)

These Sylvania instant start lamps will be available only in the 40-watt T-12 size at present. (They are not interchangeable with standard lamps on *standard circuits.)*

TOP: A standard 40 Watt T-12 fluorescent lamp which has been subjected to a fine spray of water vapor from an atomizer to simulate a condition of very high humidity. Although extremely difficult to show satisfactorily in a photograph, the lamp is completely covered with a film of water as indicated by the large drops suspended along the under side.

BOTTOM: One of the new Sylvania Instant Start lamps which has been subjected to water vapor the same as the standard lamp above. As can be seen, the hydrophobic coating prohibits the formation of a continuous film of water as with the lamp above. The moisture collects in tiny droplets, each separated from the other by a completely dry area.

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tions of these charts in which denie such as those just listed are used; b such charts are practically worthle since, for example, a 75-den. yarn w produce about an 82-den. crepe if to 60 turns are inserted.

It is the common practice to calcu late efficiency from up-twisters b weighing the production from them and this practice has led to many in accuracies, particularly when it is con sidered that crepe twisting efficiency can normally be expected to exceed 95%. This means that there is a margin of 5% between average and perfect production. There are several factors which can greatly influence production almost as much as 5%. Such factors are humidity, take-up of soaking ingredients, stretch from ten sion, and twist contraction.

In order to obtain a true efficiency figure from an up-twister, either calcu lation must be taken other than the counts produced, or relatively elabor ate precaution must be taken, if a strictly accurate figure is desired. A substitute method is one such as calcu lating efficiency from the number of ends down plus machines standing, if any. On package-to-package operations, this efficiency can be determined from the number of packages produced (which also might serve as a basis for a piece rate), but this method is not any more accurate in calculating pro duction than in weighing yarn.

Going back to the original question as to whether the untwisted or twisted denier can be used in calculating up twister production, it should be pointed out that there is nothing what ever to prevent the yarn from contract ing as it is twisted, since the yarn is not let off the twister spindle in any controlled fashion, other than by the tension applied by the flyer, if a flyer is used. For example, if 100-den. yarn is being twisted with 55 turns to the inch, the actual yarn produced will be something like 112 den. The number of turns per inch is always calculated on the final yarn.

It should be pointed out that you cannot take the elongation as deter mined from a twist tester as accurate for calculating the twisted denier from the untwisted denier. This elongation does not take into consideration such factors as take-up of soaking solution and stretch due to tension. You may find that a supposedly 100-den. raw yarn may have an "elongation" of over 12% and yet weigh only 112 den. You will find this is particularly true if the weighing to determine the denier is done after steaming. From this you can see that for strict accuracy the denier should be determined from the unsteamed yarn.

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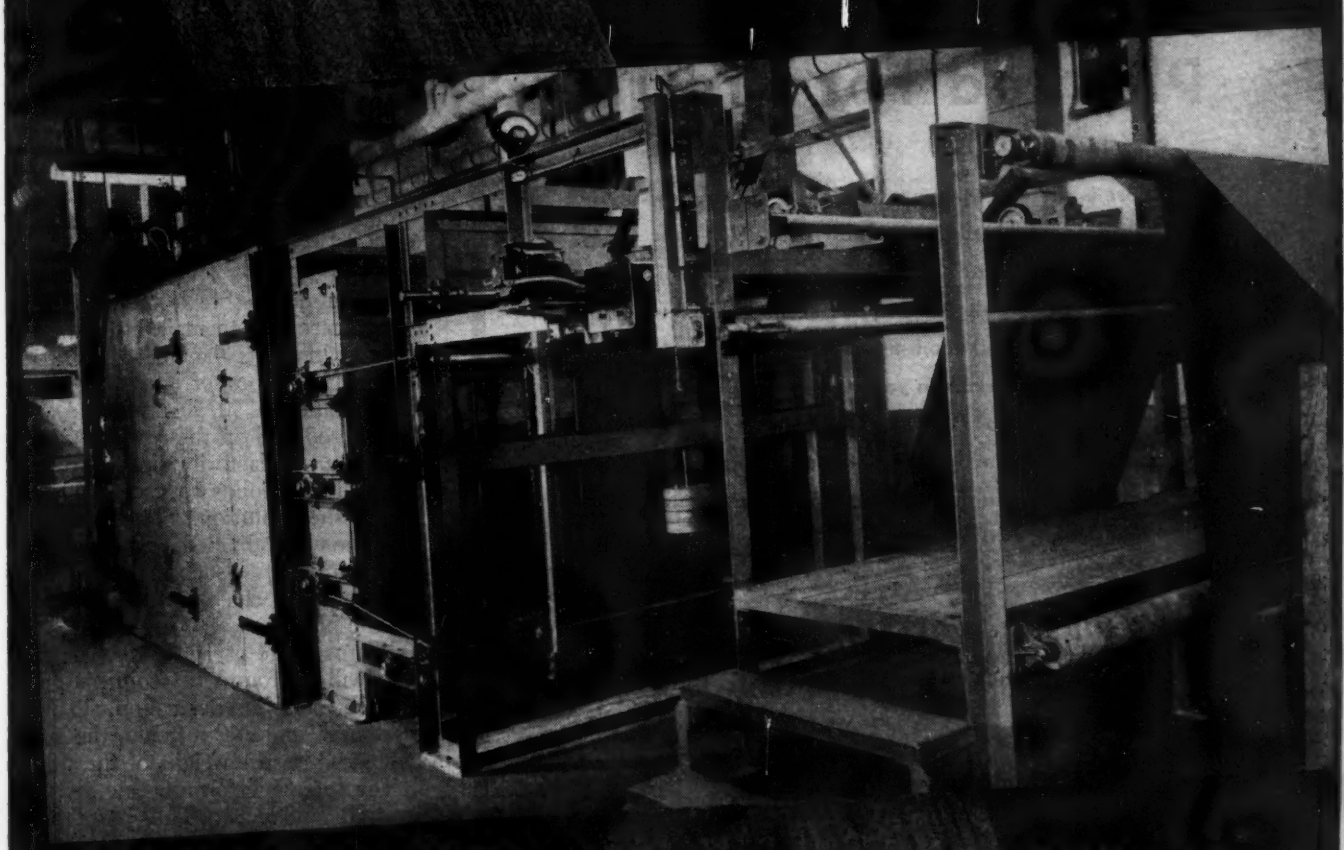
PROCTOR

High Speed TENTER DRYER

For efficiency in the drying of fabrics which must be held to width during the drying operation, the performance record of the Proctor High Speed Tenter is beyond comparison. Consider the all-important matter of drying time. In this machine circulation of heated air is *through* the cloth rather than simply across the surface. It is easy to visualize how this speeds drying time. Since every fiber comes in contact with live, heated air, rapid evaporation takes place throughout the entire thickness of the cloth. Surface baking is eliminated and it is possible to operate the machine with high initial atmospheric temperatures without the danger of high cloth temperatures. Not only is production speeded, but the quality of the fabric being dried is vastly improved. Direction of circulating air can be varied to suit the character of the cloth being dried. To further insure conditions within the dryer being suited to the cloth, the conveyor is equipped with a variable speed transmission so that speed of conveyor may be regulated. All-around economical operation plus the greatly increased capacity of this machine reduce production costs to new low figures. Learn the many details and operating advantages of this modern tenter dryer—write today!



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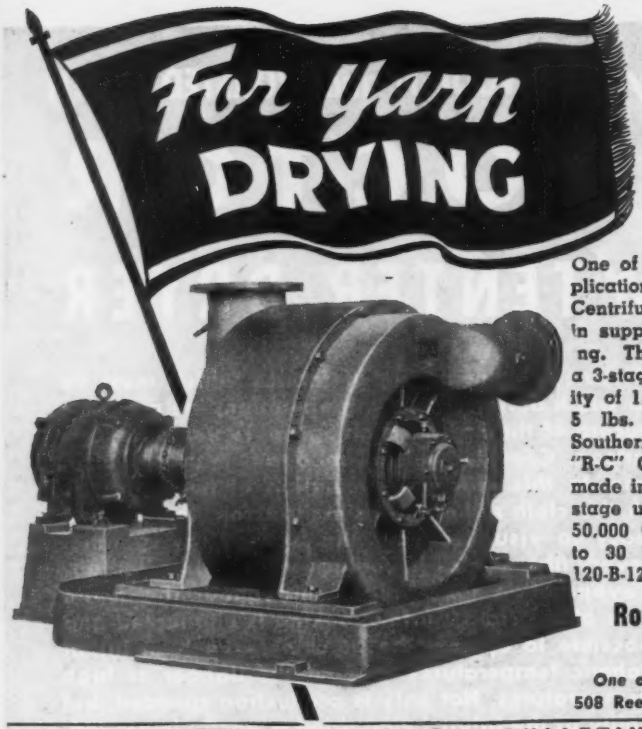

One of the most successful applications of Roots-Connersville Centrifugal Blowers has been in supplying air for yarn drying. The "R-C" unit shown is a 3-stage blower with a capacity of 1,200 CFM at 3,500 RPM, 5 lbs. pressure; used in a Southern yarn drying plant. "R-C" Centrifugal Blowers are made in both single and multi-stage units in capacities up to 50,000 CFM and pressures up to 30 lbs. Copy of Bulletin 120-B-12 mailed on request.

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508 Reed Ave., Connersville, Ind.

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MEINHARD, GREEFF & CO., Inc.

51 MADISON AVE., NEW YORK 10, N. Y.

FACTORING FOUNDED ON SERVICE

Spun Rayon Warps

(*Continued from page 129*)

warps shrink in width during slashing. A shrinkage of ¼ to ⅜ in., according to the type of yarn and warp sley, is to be expected. Care must be taken to set the beam flanges accordingly.

As a rule, sizing ingredients producing a clear solution of low viscosity are found to possess greater penetrating power than those producing a thick solution. With high-sley warps when penetration is a necessity, low-viscosity solutions—provided they impart sufficient cohesion—deserve particular attention. It might be added that temperature is probably the best aid to penetration. That is well supported by the fact that spun-rayon sizes are usually applied at higher temperatures than are sizes used for continuous-filament slashing.

The type and concentration of the size to be used does not depend solely upon the make-up of the yarn; that is, whether it is 100% spun rayon or any type of blend. It is found that a yarn spun on the worsted system will require a different sizing formula from a yarn made from the same type of staple but spun on the cotton system.

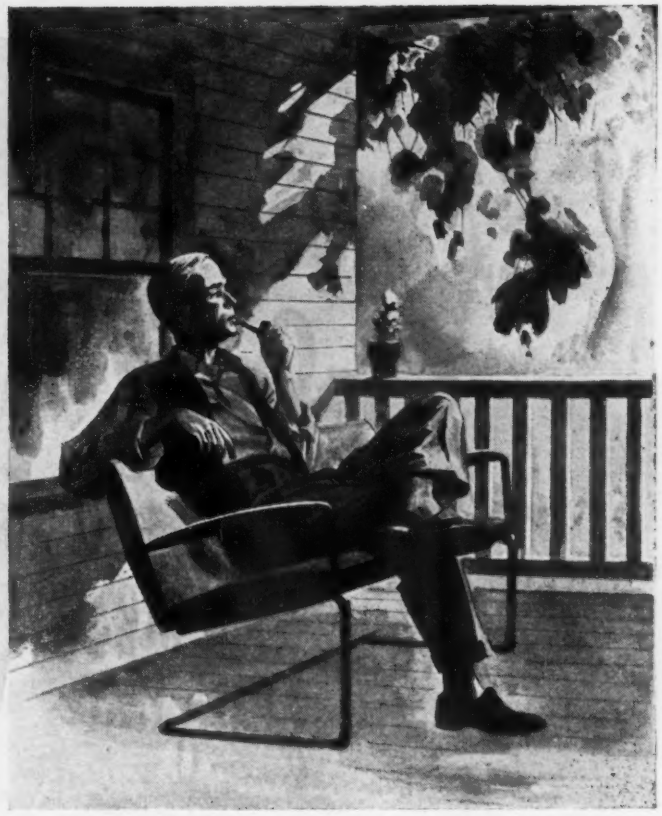
To be more specific, it might be said that a 100% spun-rayon yarn prepared on the cotton system will, as a rule, be sized satisfactorily by using a formula comprising 0.5 lb. of solids (gum, converted or roasted starches), 10% of a desirable plasticizer, and 5% of a softener to one gallon of finished solution. The plasticizer and softener are calculated on the weight of the solids.

When dealing with a 100% rayon yarn spun on the worsted system, the amount of solids should be raised to 0.8 to 1.0 lb. per gallon of finished solution.

When dealing with blends, it becomes necessary to make up the bath with ingredients having affinity for the various types of fibers involved. For instance, a 50/50 rayon-and-wool blend produced on the worsted system could be satisfactorily sized with 0.8 to 1.0 lb. of solids to each gallon of the finished solution. The 0.8 lb. of solids may be divided between different ingredients (such as gum, converted starch, etc.) as found suitable for the blend.

Warps made of 100% spun-acetate yarn will be found to require around 0.75 lb. of solids per gallon, 20% of plasticizer, and 5% softener, the latter two based on the weight of the solids.

The foregoing formulas are given as general guidance. The proportions cited will have to be increased or decreased somewhat according to the potency of the sizing ingredients and



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according to the sley, weave, picks, mill conditions, etc.

Care must be taken to obtain minimum slasher gain in yardage Warps will be found to gain hardly more than ½% if proper attention is given to the important point of tension. An overstretched warp is likely to show poor weaving efficiency and to produce a thin and unstable cloth.

In-Plant Feeding

(*Continued from page 133*)

will include in each case, if desired, a blueprint showing efficient utilization of space. Recommendations will be made for the best operation, menu planning and food purchasing, recruiting and training of food service personnel, and a nutrition education program for better health and efficiency of workers.

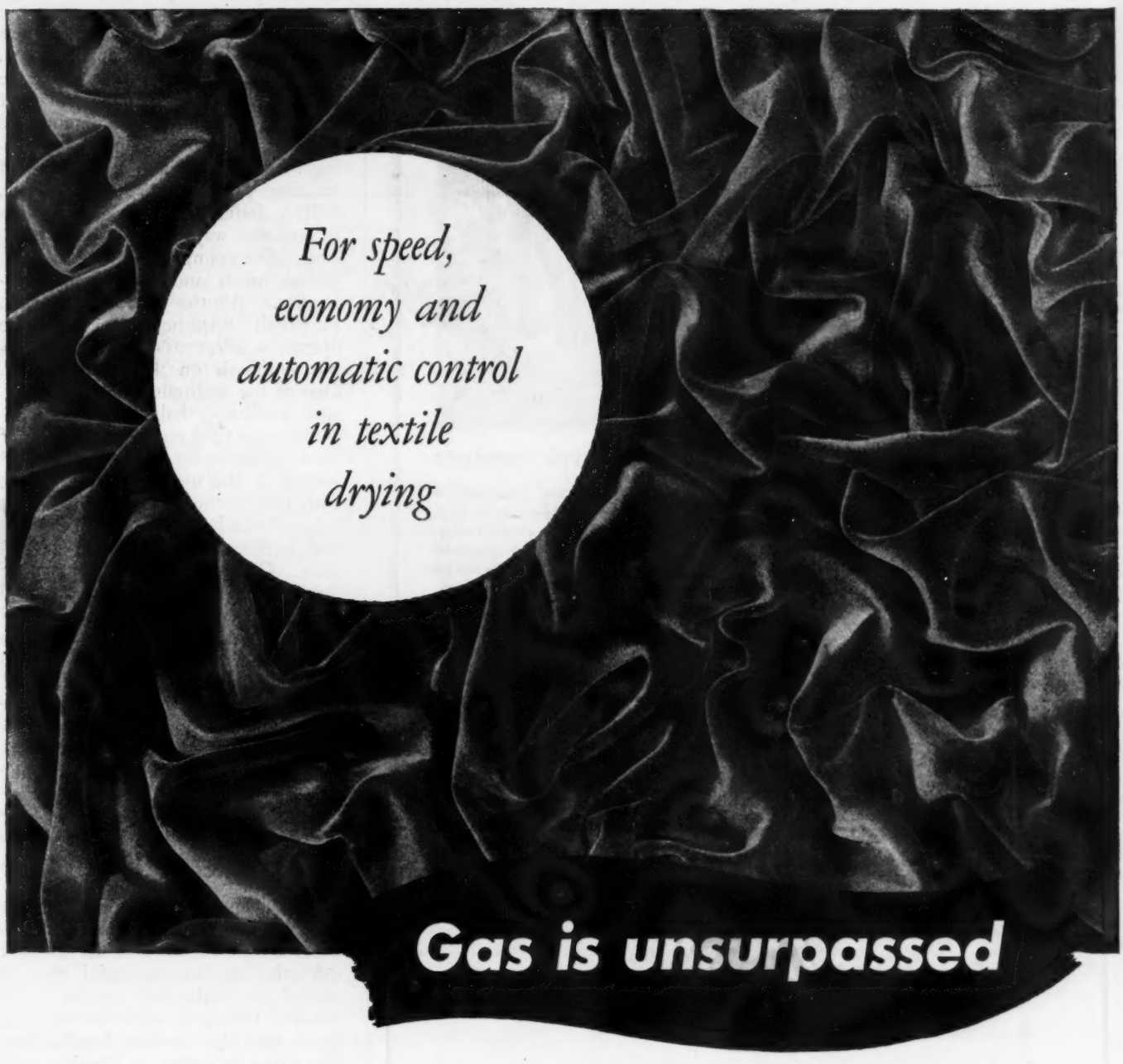
It is suggested that management make use of the various pamphlets, posters, table tent cards, etc., which the government has prepared.* Of special value are two monthly publications which may be obtained free of charge from the regional offices: (1) "Industrial Nutrition Service" for employee publications, and (2) "Serving Many" issued monthly to bring food news to food managers in industrial plants.

Basically, factors in determining requirements for any industrial feeding installation, regardless of size, include the total number of meals to be prepared, the meal pattern, length and number of lunch periods, plant area, distribution of employees, and finances. Of course, specific recommendations go into much detail. They show the necessity of planning for production flow in the preparation of food; they discuss proper arrangement of equipment to save food, operating, and personnel costs; they specify the general type and capacity of equipment needed and suggest serving-counter and seating arrangements.

In most cases there is a standard plan, appropriate in size, developed by USDA's industrial feeding program division that can be included with the recommendations to illustrate the various points covered.

Approximately 100 cotton-textile mills in nine Southern states have requested and received USDA recommendations for installation of in-plant services during the last year. Some mills are planning on a gradual swing to more in-plant feeding facilities, starting with well-planned kitchens and

* *Material includes: Planning Meals for Industrial Workers, NFC-2; Industrial Feeding Management, NFC-14; Your Employees Are No Better Than the Food They Eat.*



As the modern industrial fuel for all operations requiring heat, Gas is unsurpassed for its speed and economy. These qualities, inherent in Gas, make it the ideal fuel for all textile heat operations.

There is no time-lag in heating up Gas equipment—you get the needed temperature quickly and can maintain it as long as desired. As for economy, considerable savings in unit and overall costs, greater speed in production and minimizing of rejects can be credited to the use of modern Gas equipment.

For the closest automatic control, Gas is the recommended fuel throughout all industry. In this respect it has been proved superior in hundreds of war plants making every variety of goods—including textiles. And with Gas, you secure the utmost cleanliness and most satisfactory working conditions.

The Industrial Engineer of your local Gas Company will demonstrate, without obligation, how modern Gas equipment will enable you to do a better job of drying, singeing or other textile processing that utilizes heat.

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INDUSTRIAL AND COMMERCIAL GAS SECTION
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

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BUY WAR BONDS—SPEED FINAL VICTORY!

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

The Fleet Line

TYPE TLBT STAINLESS PIECE DYE KETTLE

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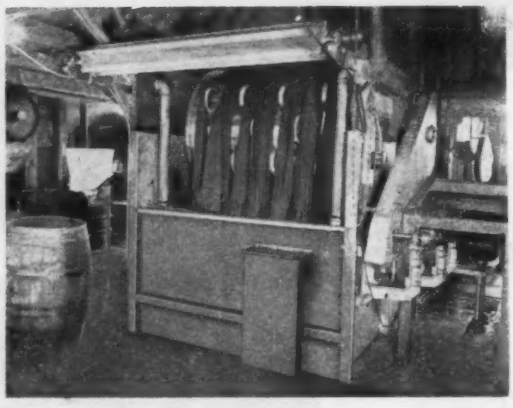
INSTALLATION IN WELL-KNOWN NEW ENGLAND MILL



NEAREST THING TO UNIVERSAL KETTLE EVER OFFERED

Has successfully dyed woolens and worsteds ranging from 5 oz. flannels to 32 oz. meltons; from worsted shirtings through gabardines, to heavy men's wear serges; and from knitted shoe linings to heavy knitted ski cloth.

OTHER ADVANTAGES: No tangles or tie-ups—due to design of tub and to large drum-type Multi-Grip Reel (patented). • Wrinkles, creases and dye streaks virtually eliminated because goods change folds readily. • Slip and resultant troubles eliminated. • Up to 10% saving in dyestuffs over other STAINLESS kettles. • 25% saving in steam, etc.

Circular on request.

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RAYON TOPMAKER

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158 SUMMER STREET

BOSTON 10, MASS.

lunch counters from which workers can buy good food at reasonable prices.

War has brought its inevitable problems to cotton-textile mill in-plant feeding. Obtaining equipment and facilities, adjusting menus to fluctuating food supplies, and recruiting and training personnel are only a few. USDA industrial feeding specialists recommend ways to solve these problems. For example, they suggest simplified meals and use of meat extenders. Another recommendation, for both wartime and peacetime operation, is less variety in daily menus but emphasis on day-to-day variety. One of the methods employed to assure workers a balanced lunch and at the same time create a minimum of work problems for both operator and worker, is the use of a plate special. This usually comprises an entree, two vegetables, a limited choice of desserts and beverages, and bread at a fixed price. Chief among the advantages of this feature are that an adequate meal is available to workers, abundant food can be utilized, and time is saved in preparation. In addition, waste and manpower needs are cut down.

Plant management is discovering more and more that top-rate facilities tend to attract the best workers and also result in less turn-over among workers and less absenteeism. These are the main reasons that the food wagon, which used to make the rounds in many textile mills at lunchtime, is being replaced increasingly by well-equipped lunch rooms and cafeterias. The Beaumont Mfg. Co., Spartanburg, S. C. found that its in-plant cafeteria was so successful that it started an "out-plant" service in its modern two-story cafeteria building. Every work day, workers' families may join them in eating an evening meal between the hours of 5 and 6 p. m.

Among mills which have received USDA recommendations for food services are those owned by Marshall Field & Co., at Spray, Leaksville, and Draper, N. C. The Indera Mills at Winston-Salem, N. C., has a cafeteria which provides lunch for every worker, although the mill has only 125 employees. In Georgia, owners of six plants employing from 55 to 500 workers are considering installation of one preparation-unit with cafeteria facilities, plus canteens and distribution centers at each plant.

There is now widespread recognition throughout industry and labor that the availability of good food on the job helps to keep good workers on the job, no matter what the line of work. It is interesting to note that food on the job is now provided for 7,000,000 manufacturing workers, plus approximately 2,000,000 more in

Good companies settle here . . .

and stay!

Today, as always, Southern New England is the heart of the world's richest, most highly-concentrated market . . . the best of all reasors why industry should—and does—make this its home.

Draw a circle 500 miles from the center of Southern New England and you will include 58,000,000 consumers. Into that circle, Southern New England pours not only consumer goods but its producer commodities—machinery, tools, ball bearings—the parts and equipment that keep other industries going.

Beyond that circle looms the great world market of tomorrow . . . a market that will be served most efficiently by Southern New England's strategically located ports.

Southern New England has its personal appeal, too. For with its many delightful residential communities, its hills, lakes, and sandy beaches never more than a few miles from where you work, Southern New England is a great place to live and play.

As you weigh the future of your new or expanding business, consider Southern New England.

Search where you will, you won't find a more favorable spot . . . *anywhere.*

For your business and personal postwar planning, we offer an industrial booklet in full color: "Southern New England for Tomorrow's Industry". This booklet is yours for the asking. Write to P. E. Benjamin, Manager of Industrial Development, The New Haven Railroad, 80 Federal Street, Boston 10, Mass.

This is one of a series of advertisements presenting the industrial advantages of Southern New England.

THE NEW HAVEN R.R.

Serving **SOUTHERN NEW ENGLAND** *with a network of rail and highway transportation that puts every manufacturer* ON THE MAIN LINE.

pound for pound...
dollar for dollar...

Calgon*

will process more textile material than any other phosphate

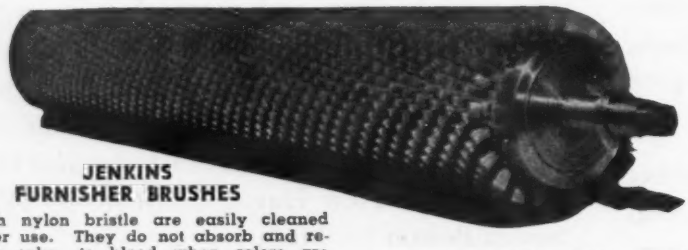
* Calgon is the registered trade-mark of Calgon, Inc. for its vitreous sodium phosphate products . . .

Write for technical bulletin No. 3 "Calgon Data for the Textile Chemist." Address Calgon, Inc., a subsidiary of Hagan Corporation, Pittsburgh 30, Pa.

Leading Textile Mills Prefer

JENKINS METAL CORE CYLINDER BRUSHES

—because they last indefinitely without sag, run true at all times, and bristle can be replaced as often as it wears down. The cores are of cold drawn steel or aluminum. Both nylon and natural bristles are available, wound in place with flat copper wire and special moisture-proof cement. Included are—



JENKINS FURNISHER BRUSHES with nylon bristle are easily cleaned after use. They do not absorb and retain color, to bleed when colors are changed.

JENKINS FLOCK BRUSHES Raising Brushes and Laying Brushes with metal cores improve the finish of textiles on which they are used.

JENKINS CLOTHROOM BRUSHES WITH NYLON bristle have the rigidity and even wearing qualities required for uniform finishing.

Ask for our catalog of Metal Core Brushes

M. W. JENKINS' SONS, INC.
CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Since 1877—Manufacturers of All Types of Industrial Brushes.

non-manufacturing industries, whereas before the war about 2,000,000 manufacturing workers were employed where some type of food service was available.

Better Synthetic Fibers

(Continued from page 99)

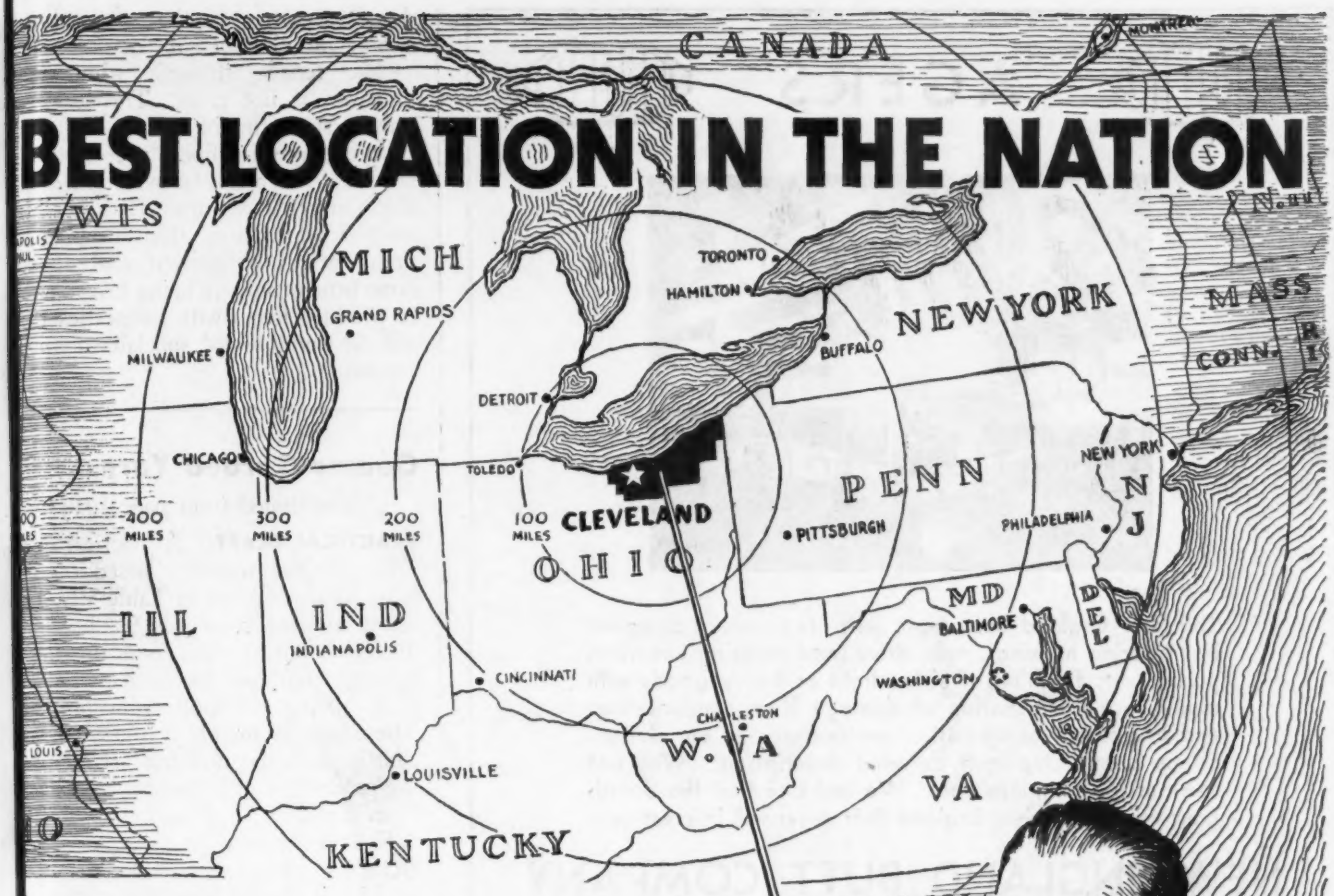
upon by micro-organisms and enzymes.

It is obvious that the keratin proteins are the more stable and permanent and it might be assumed offhand that they are the more widely used industrially of the two. The contrary, however, is true, because the softer globular proteins are more readily soluble and are available in purer form and in greater supply. Thus casein, the curd of sour milk, is the most used industrial protein (outside the field of animal glues), while the proteins of soybeans, peanuts, corn, and other food plants are trying for their place in the sun.

At the Western Regional Research Laboratory investigations of the proteins assigned (those derived from alfalfa, wheat, and eggs, in addition to keratins) have been under way in an effort to determine their structure and the possibilities of modifying them for practical purposes. The research program has included the preparation of fibers from fibrous protein, and also from globular proteins converted to fibrous form by treatment. Chicken feathers, representing keratin protein, and egg albumin, which represents globular, have been used extensively in these studies.

DETERGENT. Research has shown that a detergent, such as sodium alkyl aryl sulphonate, in water solution is a solvent for both a globular protein and for a mixture of a keratin and a reducing agent. The detergent has been found to be more than a solvent, since it releases the forces holding the globular molecule in its folded position and thus allows the molecule to assume the linear or fibrous form. Moreover, the detergent reacts with the side chains in fibrous or linear molecules, thus holding the chains extended until the solution can be extruded through a spinneret.

The spun fiber of both originally fibrous and converted fibrous protein can be treated with either acetone or acetone and salt solution, which breaks the chemical combination between the protein and detergent and extracts the detergent, leaving the protein with chains extended in the direction of the fiber axis. The fibers are stretched, preferably in steam, to the extent of 300 to 400%. X-ray diffraction patterns show distinct and definite fiber orientation; and the tensile strength,



BEST LOCATION IN THE NATION

5 Million Customers Within 500 Miles!

ORE THAN HALF of the people in the United States and nada live within 500 miles of Cleveland and Northeast Ohio making this area by far the *best location in the nation* for both oduction and distribution of textile products, as well as for nagement headquarters.

In addition to being the Market Center of America, this area o offers many other superlative advantages to textile manufac- ers planning to expand, or to build new plants. Among them:

- uperlative transportation by and, water and air
- *dequate electric power at low ates*
- lenty of manpower with the know-how
- asic textile materials right at and
- atisfactory climate for pro- uction
- —many users of finished materials
- —ample financial services
- —numerous business and industrial services
- —favorable tax structure—no state income tax
- —unlimited fresh water supply
- —desirable plants and plant sites
- —excellent living and cultural environment

ND FOR NEW BROCHURE. We tell more about this area's ny superior industrial assets in an up-to-the-minute brochure, *he Best Location in the Nation for Many Industries*". We will glad to send you a copy upon request.

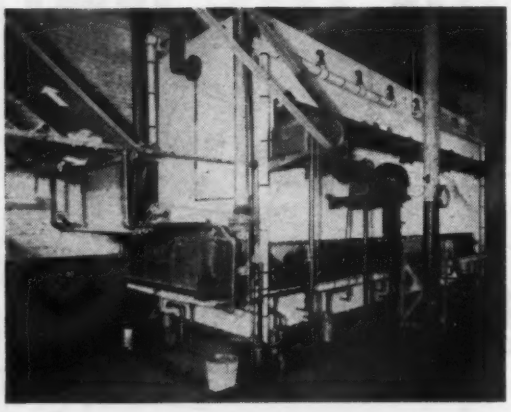
E THIS SERVICE. We also provide a complete, confidential *ation engineering service* without charge to managements of mpanies who are considering expansion.

Call, write or wire Industrial Development Division, R. C. Hienton, Director

HE CLEVELAND ELECTRIC ILLUMINATING COMPANY

81 PUBLIC SQUARE • CHERRY 4200 • CLEVELAND 1, OHIO

NEBUTTCO AGERS NEBUTTCO



The New England Butt Ager, with its specially designed ball bearing housings, rolls, drive, and entering chamber, permits the finishing of either light or heavy goods with equal ease. Elimination of damage from condensation, and low steam consumption are features of our design. Space does not permit detailed description. Why not write us for complete data: We feel sure that the details concerning the New England Butt Ager will interest you.

NEW ENGLAND BUTT COMPANY
PROVIDENCE 7, R. I.

ROBISON
Rayon Yarns

Filament and Spun Rayon Yarns
dyed and twisted to your specifications.

ROBISON PROCESSING COMPANY, Inc.
BOSTON, MASSACHUSETTS
New York Sales: 450 Seventh Ave.

dry, is greater than that of wool and approaches that of silk.

The tensile strength when wet, however, is not great. The low wet tensile strengths of all the so-called synthetic protein fibers is a common weakness that must be overcome if the fibers are to have more than very restricted application. This problem is under attack at present and at the same time means are being investigated to produce fibers with properties that will be suitable for specialized applications.

Coarse-Carded Yarns

(*Continued from page 101*)

PRACTICAL DRAFT. A practical draft range for the numbers based on .70 hank roving is given in Table VI. The finest number shown is 9s, but this does not indicate that 9s is the finest number that can be spun from .70 hank roving on long-draft spinning. The range is merely a practical one that a particular mill has selected for the production of certain types of yarn from the same hank roving.

Should the mill, for example, manufacture a range of numbers from 8s to 14s, it would have the choice of using the same hank roving and risking a tremendous spinning draft, or lightening the roving to about .90 hank. Between these choices, of course, the mill would select the latter. The contrast is drawn only to emphasize that one of the most practical considerations of the organization is not the specific number to be drafted, but the range of numbers which may be drafted from the hank roving. This range is determined by such factors as mechanical condition of equipment, character of cotton, spinnability of product, etc. Therefore, the practical range of numbers shown for .70 hank roving is for one set of manufacturing conditions only.

LONG-DRAFT ROVING. It should not be inferred from the organization given that the coarse carded-yarn layouts do not employ high drafts at the roving processes. There are many examples of the use of Interdraft, Superdraft, J-3, and Five-Roll long-draft systems. Many of the mills which have organizations similar to the duck yarn shown in Table V may be drafting 5.00, 6.00 or 7.00 on roving equipment which has a potential draft of 15 to 20. The draft requirements of the mills are such that almost any mode of roving draft known to the trade can be used in one way or another; and to meet these requirements, mills use conventional slubbers, the H & B Four-Roll and S-L Model M, the Whitin long

TEXTILE BANKING COMPANY

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

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COFFING'S "Super-Man" SAYS:

"I may be a funny looking guy, but I'm proud of my physique. My head is spurred for efficiency. My body is electrified with strength and energy. My arms and legs are powerful and untiring and can do all your lifting and pulling jobs with an ease that is astounding. Right now I'm working for Uncle Sam, but I'll soon be free to work for you. Ask my boss about the thousand-and-one jobs I can do for you and what a help I'll be in the post-war period."

Our new folder describes Coffing Products that will be available for your peace-time needs.

WRITE FOR FOLDER NO. J 4

COFFING HOIST COMPANY

RATCHET LEVER HOISTS - SPUR GEAR HOISTS - ELECTRIC HOISTS
LOAD BINDERS - DIFFERENTIAL HOISTS - TROLLEYS

DANVILLE, ILLINOIS

"U. S." RING TRAVELERS REACH YOU IN PERFECT CONDITION

This sealed metal container protects you by protecting your U. S. Ring Travelers in transit and storage. On a par with the high quality of "U. S." Ring Travelers is the care we take to see that they reach you in perfect condition. Each container bears data insuring exact duplication of contents when desired.

PERFECT BALANCE Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend Inward" at top of horn.

HEAT CONTROL for bettter metal—dominates "U.S." production! Carburising and tempering ovens are electrically controlled through pyrometers—for better performance.

● SOLD UNDER THESE TRADE NAMES.

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Opal and Round Wire Traveler
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO

AMOS M. BOWEN
President and Treasurer

PROVIDENCE RHODE ISLAND

draft, and the higher drafting systems already mentioned.

For examples of the latter, tire-cord and knitting-yarn organizations are appropriate. These yarns have high quality requirements and are made from good cotton. Because of the quality requirements, they are usually made from double roving in spinning which necessitates higher drafts at the roving frame. The organization of 11.50s tire cord, 3.25 x sq., shown in Table VII is an example of a coarse carded yarn which has a practical balance between roving and spinning drafts. By the use of Interdraft, the mill obtains a roving draft of 11.30 and a spinning draft of 14.94. With double roving and a 1 3/32-in. cotton, the mill is using its long-draft equipment economically.

Continuous Processing

(*Continued from page 119*)

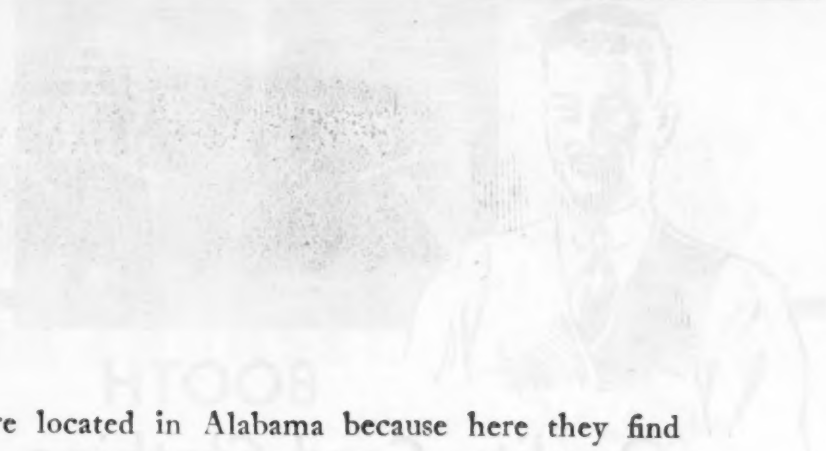
separating the opening section from the scouring section to keep dust and fly out of the scouring room.

Connecting an opener and a duster makes it easier to clean raw material because the fiber is in a more fluffy condition when it reaches the duster. If no dusting is desired, the stock is blown from the opener to the baling press or to the scouring unit. Control is, of course, by means of switches in the pneumatic pipe line. Only one helper is required to operate the unit regardless of the number of different opening and cleaning operations given the stock.

When scouring is to be done, the stock is blown to a storage bin above the feed box of the scouring machine. The use of a storage bin is of importance because it is necessary to stop the scouring machine frequently to change the water and the chemicals. The bin will act as a reserve and prevent stoppage of the unit in the dusting and opening section. It must have enough space to take care of the quantity of wool that will pass through the opening and dusting while the solution change is being made in the scouring bowls.

A storage bin should likewise be built above the bale presser in order to place the entire operation on a continuous basis. Baling is an intermittent operation as each bale in succession, when compressed, has to be wired and taken out of the press.

MANPOWER REQUIREMENTS. The question arises as to the number of men required to operate the streamlined unit described. One man can handle the bale breaker, opener, duster, and burr picking unit. One man is needed for the scouring,



TEXTILE MILLS are located in Alabama because here they find many intelligent women workers ready to accept employment.

Other reasons are a state government that believes in fair treatment to business; a natural climate that is mild and makes for low cost in textile manufacture; friendly towns away from congested industrial areas; native-born help which learns quickly; a dependable supply of low-cost electric power.

Your correspondence relative to possible locations for your plant is invited. Write our Industrial Development Division, Birmingham. Our engineers will compile, without expense or obligation to you, facts to help you reach a decision.

Thos W. Martin

President
ALABAMA POWER COMPANY

BOOTH
Quality Card Clothing
Aids Your Cost Record

By developing the full efficiency of your cards, BOOTH QUALITY CARD CLOTHING makes a definite SAVING in your production costs. We suggest you try it.

A complete line including Cylinder Clothing, Doffers, Workers, Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

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The PRIME *Favorite!*

Why is DIASTAFOR de-sizing agent *preferred* by the textile trade? There are *many* reasons—but they all add up to one thing . . . *superb quality*.

DIASTAFOR

affords flawless results in the finishing of cotton, mixed goods and rayons. It gives an ideal smoothness and suppleness without danger of discoloration or impaired tensile strength. Microscopic inspections of DIASTAFOR-finished goods show the perfection it achieves every time.

For further information see our technical man or write to—

FLEISCHMANN'S DIASTAFOR
DIASTAFOR DIVISION

STANDARD BRANDS INCORPORATED
595 Madison Avenue, New York 22, N. Y.

DIASTAFOR *37 Years of Satisfactory Results*

carbonizing, and neutralizing unit. One man is on the dryer. The last named can help the additional man required for the bale press. This means that four men and a foreman who is only in supervisory capacity can handle the entire unit.

Through right planning and proper layout, manpower is utilized only as the controlling power in the entire operation. This makes the cost of preparing the raw materials comparatively cheap. Already there are mills in this country that have done such work as outlined in this article to place themselves in a competitive position in the postwar period so they can compete with the cheaper labor and lower standard of living of other countries.

Tension Control

(*Continued from page* 117)

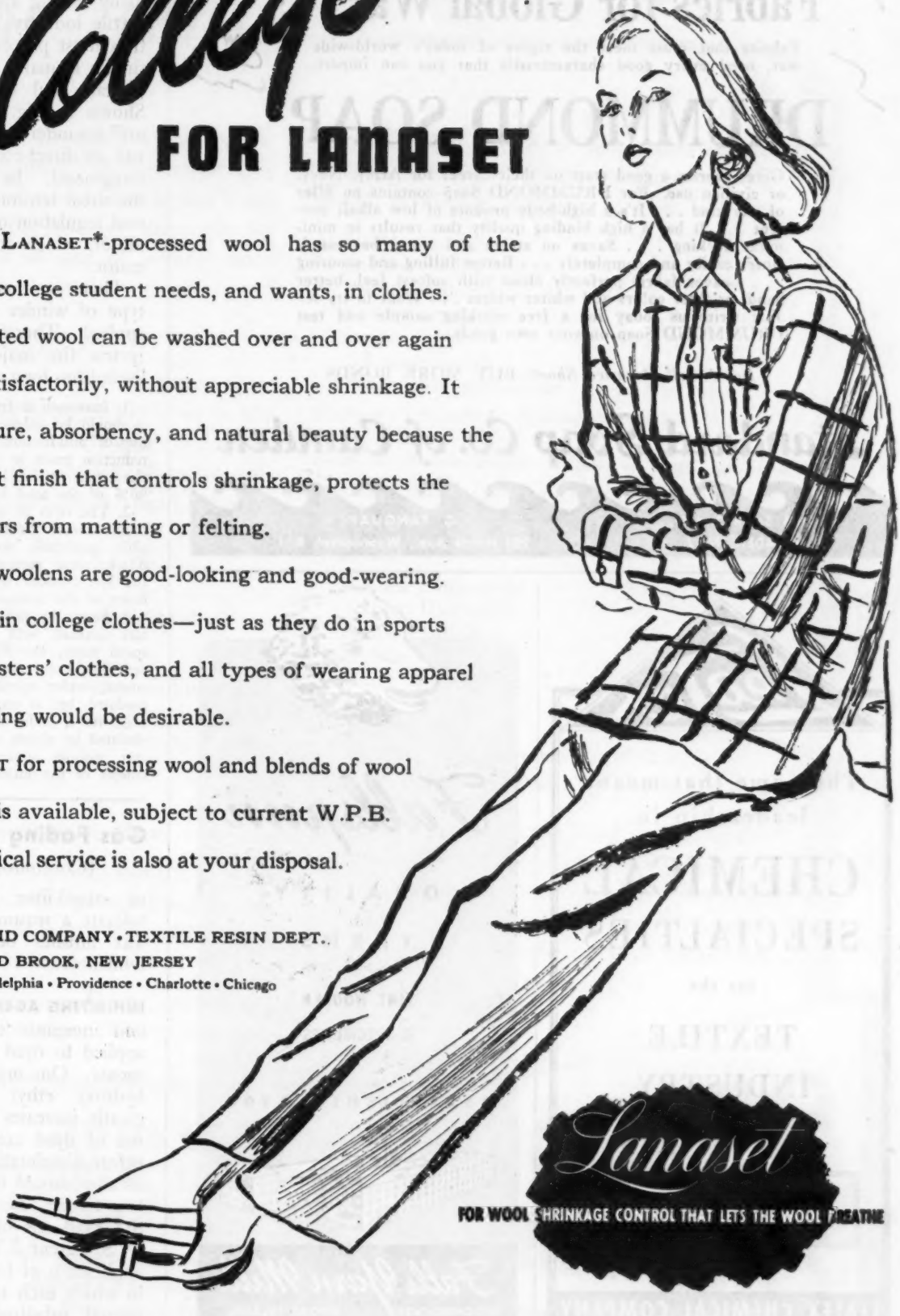
motor armature, the voltage drop across this resistor being proportional to the current passing through it. This voltage drop is compared with a standard voltage in the controller and the difference between the two voltages is fed into a suitable amplifier. The output of the amplifier is used to control the shunt field of the winder motor so as to hold the motor current at the value called for by the regulator.

As with any regulator, some power is required to make it function, and its accuracy will be decreased to an extent depending on the power it consumes. Therefore it becomes obvious that a regulator with a very high amplification and one demanding very little control power is required for accurate control of current and tension on a winding reel.

These accuracy requirements are satisfied by a modern electronic regulator or by a regulator employing a special rotating exciter such as the amplidyne, which has a very high amplification factor. Electronic equipment may be made extremely accurate to suit the most exacting conditions. Typical electronic equipment and also an amplidyne exciter are illustrated in Fig. 2.

While the preceding discussion is devoted entirely to constant tension winding, certain operations may require the tension to increase or decrease as the reel diameter builds up. By properly designing the control circuits, the regulator may be made to hold a varying motor current in a predetermined manner in order to obtain the desired result. Regardless of whether constant tension or varying tension is held, the regulator is constantly on the job making an infinite

a College Career FOR LANASET



LANASET*-processed wool has so many of the qualities the college student needs, and wants, in clothes. For LANASET-treated wool can be washed over and over again easily and satisfactorily, without appreciable shrinkage. It keeps its texture, absorbency, and natural beauty because the same permanent finish that controls shrinkage, protects the wool fibers from matting or felting.

LANASET-treated woolens are good-looking and good-wearing. They "belong" in college clothes—just as they do in sports wear, youngsters' clothes, and all types of wearing apparel where laundering would be desirable.

Sufficient LANASET for processing wool and blends of wool for plant trials is available, subject to current W.P.B. rulings. Our technical service is also at your disposal.

AMERICAN CYANAMID COMPANY • TEXTILE RESIN DEPT.
BOUND BROOK, NEW JERSEY
New York • Boston • Philadelphia • Providence • Charlotte • Chicago

Lanaset
FOR WOOL SHRINKAGE CONTROL THAT LETS THE WOOL BREATHE

*LANASET is American Cyanamid Company's trade-mark covering its melamine resin for controlling wool shrinkage. The process under which it is applied is covered by United States re-issue Patent No. 22,566.

Fits Army
Fabrics for Global War . .

Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy, or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

Don't Sell America Short—BUY MORE BONDS

Standard Soap Co. of Camden

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CAMDEN, N. J.

G. TANGUAY
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LeaTex

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CHEMICAL SPECIALTIES

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TEXTILE INDUSTRY

"Always Reliable"

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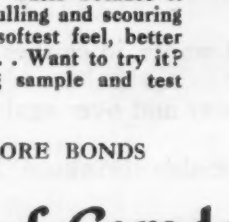
2722 N. HANCOCK ST., PHILADELPHIA, PA.



Fallspun

QUALITY YARNS

FINE WOOLEN & SPECIALTIES

ESTABLISHED 1904

Falls Yarn Mills
WOONSOCKET RHODE ISLAND

number of adjustments as the reel diameter changes.

WINDER APPLICATIONS. As evidence of the soundness of the constant-current type of winder drive, other industries such as the paper, steel, and rubber industries are obtaining excellent results from its use on many reeling applications. Like the textile industry, each of these industries must process materials in sheets similar in many respects to the sheets of yarn and cloth in textile mills. Shown in Fig. 4 is a typical paper mill rewinder with the unwinding roll and its direct-connected motor in the foregrounnd. In this particular case, the sheet tension is controlled by current regulation on the unwinding roll motor, which acts as a braking generator.

There are some places where this type of winder drive should not be applied. Therefore, it is advisable to review the major requirements and limitations for a successful application:

1. Inasmuch as friction introduces an error, it should be reduced to a minimum by the use of anti-friction bearings and high-grade reduction gears or chains. For best results, the actual tension load should be more than 90% of the total load on the motor.
2. The ratio of maximum tension to minimum tension should be kept as low as possible, preferably not more than 5-to-1 or 6-to-1, since accuracy may be impaired at the low tensions because of the mechanical losses of the system.
3. Since the price of adjustable-speed motors increases with the constant horsepower speed range, the diameter build up of the reel should not exceed 4-to-1 or 5-to-1. Of course, wider speed ranges can be accommodated, but at greater expense. Often, the need for a wide range in diameter can be obviated by simply increasing the size of the core without appreciably increasing the diameter of the finished roll.

Gas Fading

(*Continued from page 95*)

or mixed-fiber blends will usually tolerate a reasonable quantity of the wax finishes before displaying this tendency.

INHIBITING AGENTS. Various organic and inorganic chemicals have been applied to dyed acetate as inhibiting agents. One organic substance (beta-hydroxy ethyl ethylene diamine) greatly increases the length of exposure of dyed acetate to fading gases before discoloration sets in. However, its uses should be confined to all-acetate fabrics, since it is apt to affect the shade of other types of colors. U. S. Patent 2,369,122[2] refers to the application of foramadine compounds in which each nitrogen atom bears a phenyl substituent, which in itself may carry alkyl or alkoxy groups or,

Hooker Sulfides... Free from Heavy Metal Salts... Are Safe Reducing Agents

The high quality of Hooker Sodium Sulfide and Sodium Sulfhydrate—their comparative freedom from heavy metal salts makes them particularly valuable to dye chemists for selective reduction of one of several nitro groups in the same molecule.

For Preparation of Dyes

Because of their low iron content, these Hooker Sulfides are being safely used in the preparation of such products as Para Aminophenol, certain Anthraquinone dyes, including Acid Nitro Compounds, Acid Alizarin Blue SE, Developed Dyes, Rapidogen Dyes and Intermediates (Fast Color Salts).

Eliminates Settling and Filtering Sulfide Solutions

The high purity of the Hooker Sulfides also minimizes and in some cases eliminates the need for settling, decanting or filtering of the sulfide solutions.

For Removing Excess Sulfur

Hooker Sulfides are also extensively used to introduce sulfur in dye manufacturing and as a solvent to remove excess sulfur from dyes made by a sulfur fusion.

You can improve your products, save time, and lower costs with these Hooker Sulfides.

***Sodium Sulfide, Na_2S,** a light yellow colored solid in flake form, soluble in water, slightly soluble in alcohol, insoluble in ether.*

Analysis

Sodium Sulfide	60 to 62%
Sodium Chloride	1.5% Max.
Other Sodium Salts	2.0% Max.
Iron	10 to 15 ppm
All other metals	1 ppm Max.
Water of crystallization	36.5 to 34%

Shipping Containers, Drums 90 and 350 lbs. net.

***Sodium Sulfhydrate, NaSH,** a light yellow colored solid in flake form. Soluble in water and alcohol, insoluble in ether.*

Analysis

Sodium Sulfhydrate	70 to 72%
Sodium Hydroxide	0%
Sodium Sulfide	0%
Sodium Chloride	1% Max.
Other Sodium Salts	1% Max.
Iron	5 ppm Max.
All other metals	1 ppm Max.
Water of Crystallization	28 to 26%

Shipping Containers, Drums 90 and 350 lbs. net.

Other Hooker chemicals used in the manufacture of dyestuffs, as intermediates, mordants, catalysts and solvents are listed in Hooker General Products List of nearly 100 chemicals. A request on your letterhead will bring a copy.

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NIAGARA FALLS, N. Y.

New York, N. Y. — **Chlorine**, **Caustic Soda**

Wilmington, Calif. — **Muriatic Acid**, **Bleaching Powder**

Tacoma, Wash. — **Ferric Chloride**, **Paradichlorbenzene**

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8384

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- **U. S. ACME DOUBLER TWISTERS, large package**
- **U. S. REDRAWS and SPOOLERS**

U. S. TEXTILE MACHINE CO.
SCRANTON, PENNSYLVANIA, U. S. A.

simply, halogen atoms. The hydrogen atoms may be replaced by additional alkyl groups containing not more than four carbon atoms.

Such compounds are applied from aqueous solutions, dispersions or alcohol solutions, preferably after dyeing and in conjunction with the finishing operations. U. S. patent 2,321,221[3] states that if cellulose acetate fibers which have been dyed with water-insoluble anthraquinone dyes are treated with a solution of tannic acid and a solution of a metal compound, such as calcium hydroxide, such a treatment greatly increases the fastness of the color to acid fumes.

One company is offering as a gas-resistant treatment a derivative of guanidine. This compound can be obtained in either soluble or dispersed form and is said to be an effective inhibitor.

Inorganic chemicals of a mildly reducing nature are effective inhibitors when properly applied. Sodium thiosulphate, among others, is one that works well, especially when the pH of the finished cloth is properly adjusted. Such products should be stable, odorless, and colorless, but still reactive enough to combine with oxidizing gases. A number of reducing chemicals exist that will effectively inhibit fading tendencies, but they either decompose on application, affect the shade, or create an unpleasant odor in the goods.

SELECTING INHIBITORS. A word about selection of chemical inhibitors. The use of any given material or product must be determined by the degree of protection desired, the efficiency and cost of the compound, methods of application, durability, and, of course, effect on the finish.

The chemicals listed vary in the degree of protection afforded, as well as in cost. The organic types are more expensive than the inorganic, and, in general, offer better protection. However, they may not be compatible with the finishing agents ordinarily used, so that it may be necessary to give the goods an extra run or else change the finish, which is easier said than done. In the case of calcium tannate, the tannic acid must be applied in one bath and the calcium hydroxide in another in order to precipitate the calcium tannate on the fiber. Very often—if the colors are protected during manufacture of the fabric into garments, trimming, furniture covers, drapes, etc., on into their first washing or dry-cleaning—this will be all that is necessary.

Whether the fabric is to be laundered or dry-cleaned is decidedly important when choosing protective

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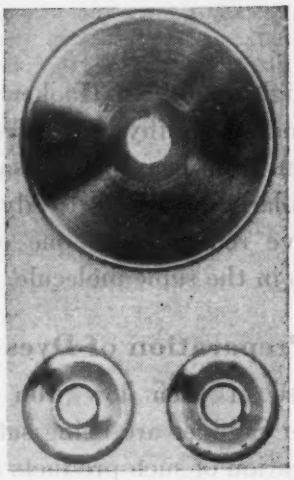

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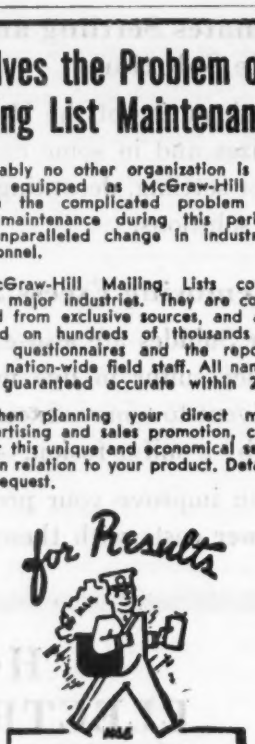

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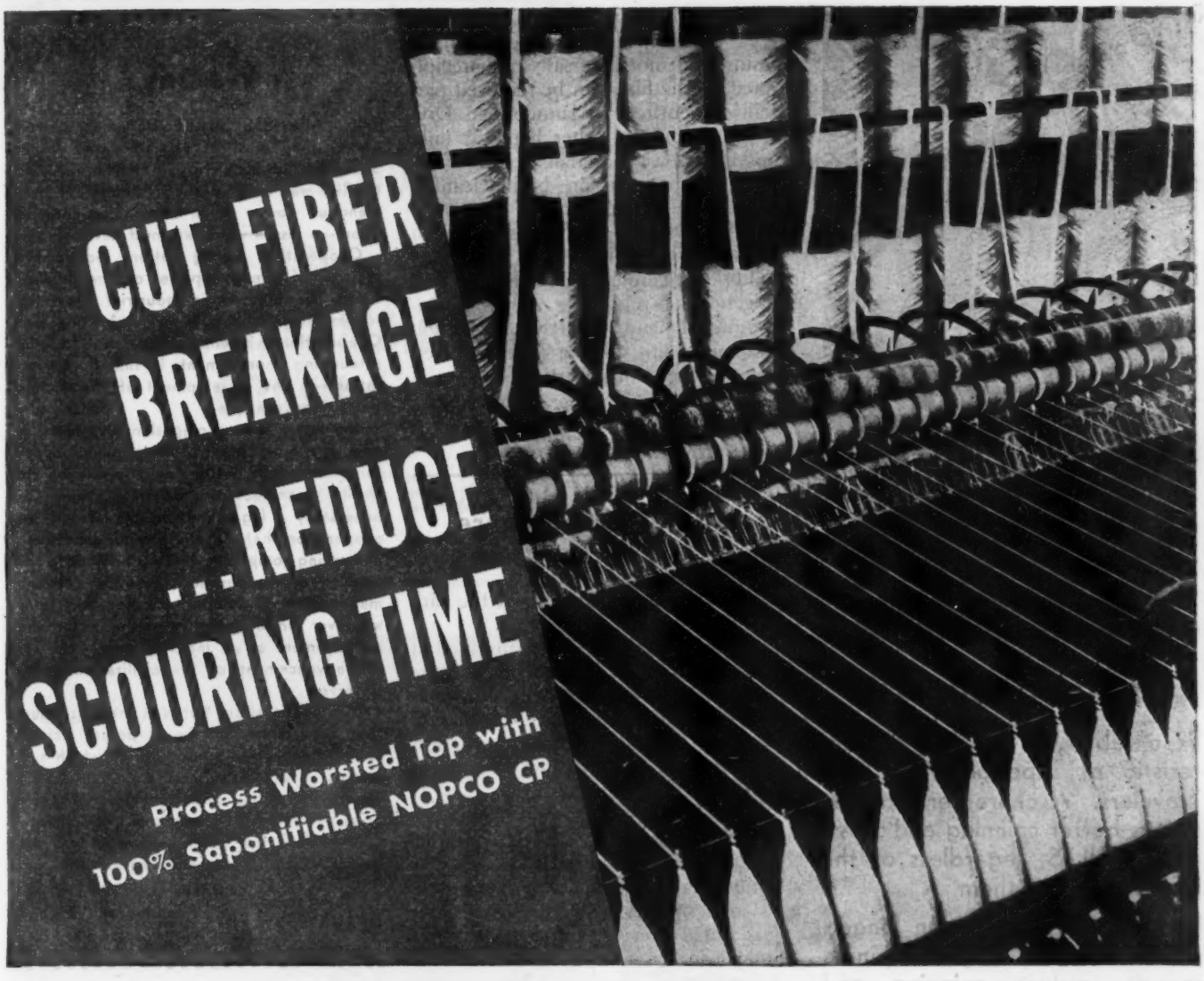

NOPCO CP, in addition to reducing fiber breakage to a minimum, prevents fly or waste in carding, drafting and spinning. Reduces static. Imparts drag equal to that of olive oil. Has excellent spreading power.

MORE UNIFORM LUBRICATION. Commercial dyers and finishers of worsted yarn treated with NOPCO CP report ease of scourability. Residual oil content usually well under .5%, thus permitting level dyeing and brilliant, clear-toned shades. Highly recommended for yarn dyed in package form.

REAL SOAP SAVINGS. Direct soap economy effected in scouring because NOPCO CP is 100% saponifiable. Reduces scouring time.

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For more complete information, write the NATIONAL OIL PRODUCTS COMPANY, HARRISON, NEW JERSEY—Branches: Boston, Chicago, Cedartown, Ga., Richmond, California.

NOPCO CP

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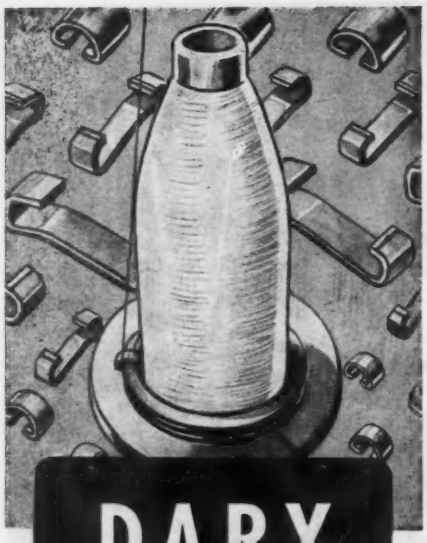

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agents. Glues and gelatins, the wax-type water-repellents, some synthetic resins, and inorganic salts not precipitated on the fiber can be removed partially or entirely in laundering. Drycleaning, on the other hand, is only apt to remove materials of a waxy or fatty nature; but in both cleaning treatments, some of the protective agent is bound to be lost through mechanical handling.

Let it be emphasized once more that selection of protective agents or inhibitors depends entirely on the job in hand, with all the facts involved given proper consideration.

[1] *U. S. Patent 2,176,506, Eastman Kodak Company.*
[2] *Imperial Chemical Industries, Ltd.*
[3] *Celanese Corporation of America.*

Controlled Atmosphere

(*Continued from page 123*)

ing to immediate demands of the various departments.

Before this system was installed it was not unusual to find a temperature of 106° F. in the mill when the outside temperature was 98° F. in the sun. Nor was it unusual to see the doffers remove their shirts before starting to work.

With the comfort of its employees in mind, as well as increased production and lower maintenance costs, the Aldora management began its schedule of modernization. First, a new roof was added over the present with 2-in. tongue-and-groove planks and a 5-ply tar-and-gravel roofing. Next, glass block was placed in the new buildings instead of the ordinary window sash previously used, and evaporative cooling was added with adequate distribution ducts, specially built fan rooms, and automatic controls.

Duct for introduction of conditioned air is located above the creel of this respooler.

The table shows wet- and dry-bulb temperatures and the relative humidity which is being maintained in the various departments.

It is possible, with this system, to maintain a temperature 11° to 12° F. cooler in the working areas than outside the building during hot, dry weather, and, since production depends on machines being kept constantly in service and the shut-down time of the machine depends largely on the speed and efficiency of the doffers, the doffer who used to work without his shirt has come to be the key man in the mill.

Having the relative humidity under automatic control permits the manufacture of a plied yarn of high twist, with great strength, and with excess elasticity removed. It has been observed that with constant relative humidity, greater life of travelers is possible since a type is selected that is best suited to controlled conditions.

V-J Day

THE JAPANESE SURRENDER has arrived earlier than most of us had dared hope. Speeding up of victory in the world-wide conflict was accomplished through the tremendous power which lies in cooperative effort—a lesson which we must never forget.

Cooperation among nations led to the massing of offensive power on the field of battle. Cooperation in industrial effort led to implementing that power in quantity. Cooperation in scientific research led to the astounding improvements in that implementation—to the development of the atomic bomb, for example.

The latter two accomplishments may suggest the most practicable applications of this war-taught lesson of cooperation to textile manufacture. Whereas there is necessarily a legal limit to the amount of cooperation that may be extended between competing companies, there is no limit to the amount of cooperation possible between management and labor and no restrictions whatever on cooperative research for the advancement of an industry and hence for the advancement of the civilization which it serves.

The cooperation between nations must now be extended to the perpetual maintenance of peace—a consideration which surmounts all others.

Let's keep this important lesson before us as we return to the ways of peace. There are precious few other heritages from the war to which we can cling happily.

EDWIN D. FOWLE
Publisher and Editor

Use UBS COMPOUNDS for BACKING, COMBINING, COATING

"and do the Job Better"

● In Combining operations, UBS developed Buna Latex Compounds provide a positive one-coat bond, good flexibility, and excellent moisture resistance and ageing qualities. Outstanding in this field is UBS's Formula CT-456-B, which has been extremely successful on the can drier machine.

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Long-time specialists in the fields of Combining, Coating and Impregnating Compounds, the UBS Laboratories are constantly working with all the latest synthetics (Buna, Neoprene, Vinylite, etc.). Recent UBS developments include formulas for an original synthetic latex and a totally new synthetic rubber.

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MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 196. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

1. "Introduction to Electronics" is the title of a 20-page booklet issued by Allis-Chalmers Mfg. Co. The booklet describes the principles of electronics and the part electronics will play in future industrial developments.

2. Dye-Makers' Woes is the title of a short article appearing in issue No. 11 of *For Instance*, published by American Cyanamid Co. The article discusses the problems which face a dye formulator.

3. Materials handling from an executive's viewpoint is discussed in a 36-page pocket-size booklet published by Towmotor Corp. The booklet is divided into three sections devoted to knowing, analyzing, and solving materials handling problems.

4. Analyzing test data by the use of statistics is illustrated in Technical Bulletin No. 773, published by Calco Chemical Div., American Cyanamid Co. Possible applications of mathematical statistics in the field of research operations are pointed out.

5. The RT-1 high-speed tricot machine is illustrated and its features explained in a folder issued by Robert Reiner, Inc. Sixteen vital points of the machine are briefly discussed.

6. Dyeing and printing spun rayon is discussed in a booklet of that name issued by Aridye Corp. The booklet describes methods for applying resin-bonded pigment colors to spun-rayon fabrics.

7. "Bringing Piping up to Peak Efficiency" is the title of an illustrated booklet published by the Crane Co. The purpose of the booklet is to aid plants in their peacetime problems of bringing piping up to peak efficiency.

8. Precautions in warping synthetic yarn are discussed in the July-August issue of *Rayon Warp Sizing Specialist*, published by Chas. B. Johnson Machine Works. The discussion is devoted particularly to the importance of even tensions and moisture content.

9. Plant sanitation is discussed in the vest-pocket size "Oakite Tri-San," produced by Oakite Products, Inc. Special emphasis is placed upon deodorizers, disinfectants, and cleaning.

10. Surface grinding with Magne-Blox holders is illustrated in an 8-page folder issued by George Scherr Co. Many adaptations of the Magne-Blox are pointed out.

11. What's ahead in paints is suggested in a 6-page folder with colored illustrations issued by S. C. Johnson & Son, Inc. The folder approaches the problem of industrial painting from the standpoint of maintenance and light-reflection values.

12. Processing rayon hosiery knitting yarn is discussed in a 4-page technical folder released by the Textile Chemicals Div., L. Sonneborn & Sons, Inc. Treatments are discussed from the standpoint of lowering costs, improving quality, and securing good appearance in the finished product.

13. The facts about the major synthetic fibers are given in a 16-page booklet entitled "The Age of Textiles," published by the National Cotton Council. Basic factual information about each of the synthetics is given.

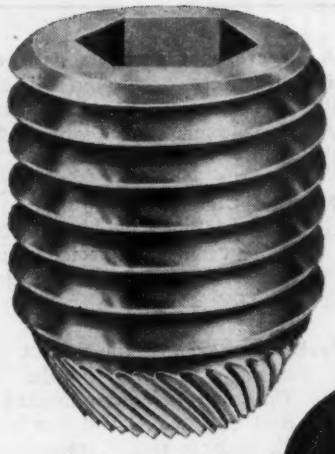
14. "Esterol Wetting and Rewetting Agent" is the title of a 4-page folder issued by Textile Chemical Div., L. Sonneborn Sons, Inc. The folder lists a number of applications of Esterol.

15. Postwar Town, U. S. A. is the label of a colored map showing a theoretical town published by the Railway Express Agency, Inc. The map illustrates typical uses for air express in a community.

16. Lubricating anti-friction bearings in their a-c and d-c motors are discussed in instruction sheet No. 3042, issued by Reliance Electric & Engineering Co. Details of construction, maintenance, and lubrication are given.

17. Molded fabric bearings are the subject of a 68-page brochure issued by Gatke Corp. Refinements and advantages of these bearings are discussed and illustrated.

18. Treating stockings with wax to increase their life is the subject of a



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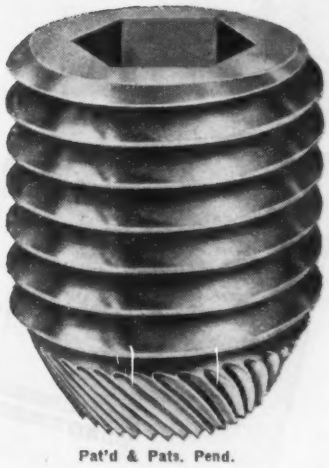

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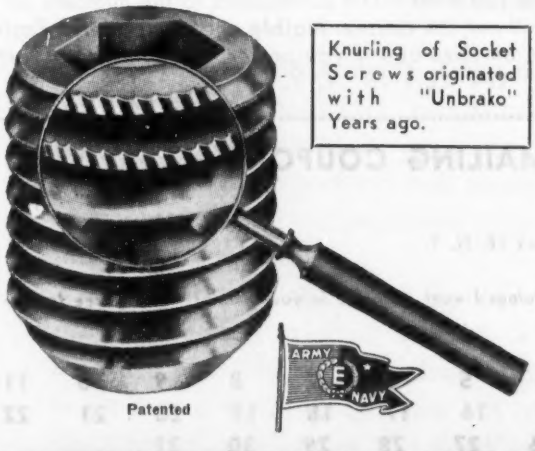

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Where the Knurled Point "Unbrako" Set Screw cannot be used, the Knurled Thread "Unbrako" will do the job. It is also a self-locker, regardless of the style of point. The knurls, shown in the cut at left, positively prevent the screw from unwinding.

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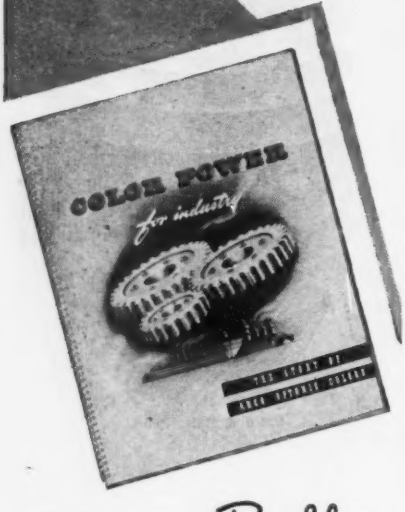

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ARCO
Paints for Industry

FREE FOR THE ASKING

short article appearing in the June issue of *Esso Oilways*, published by Standard Oil Co. Methods of applying the wax and testing the stocking for wear-resistance are given.

19. A card-inspection program appearing in the May issue of the *Saco-Lowell Bulletin* gives valuable hints in regard to inspecting the important points of a card. Pictures illustrate the points under consideration.

20. Services rendered by sound in industry are graphically presented in an illustrated brochure entitled "RCA Sound Systems," issued by the Radio Corp. of America. The brochure includes a sound system for a typical manufacturing plant.

21. "Facts in Figures About Atlanta" is the title of a 40-page vest-pocket size booklet published by the Industrial Bureau, Atlanta Chamber of Commerce. The booklet tells the story of Atlanta as the industrial capital of the Southeast.

22. Electric controls for industrial applications are discussed in Bulletin F-2287-1, issued by Barber-Colman Co. The 4-page bulletin is illustrated with photographs and tables.

23. American standards is the subject of a 24-page price list issued by the American Standards Assn. Eight hundred standards covering several fields are listed.

24. Imported stop watches are described in Bulletin No. 575 published by Herman H. Sticht Co., Inc. The bulletin is devoted to three types of stop watches.

25. A directory of products and engineering literature is given in a booklet by that name issued by Allis-Chalmers Mfg. Co., Milwaukee, Wis. More than 1,600 product types are listed.

26. Floorlife Cleaner is the title of a 4-page folder published by L. Sonneborn Sons, Inc. The folder is directed at men concerned with the maintenance and cleaning of floors.

27. Textile research is the subject of a short discussion appearing in the July issue of *The Howard Way*, published by Howard Bros. Mfg. Co. The four broad lines which postwar textile research will follow are pointed out.

28. Protective coatings are discussed in a 4-page folder published by Prufcoat Laboratories, Inc. Problems in painting to avoid chemical corrosion or water leakage are considered.

29. "Let's Look at Portland" is the title of a 50-page booklet published by the Portland Chamber of Commerce, Portland, Ore. The booklet gives factual information on the business possibilities of Portland.

30. The development of oilcloth is discussed in *The Pantasote*, published by The Pantasote Co. Interesting speculations upon the origin of oilcloth are given.

31. "Felt Facts" is the title of a pamphlet issued at intervals by the Felt Association, Inc. The purpose of the bulletin is to point out new and interesting uses of wool felt in manufacturing processes.

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This mailing coupon is a convenient size to paste on a penny postcard. ***Circle the numbers of the catalogs you want*** *which correspond to the numbers on the descriptive paragraphs. Fill out the coupon* ***legibly*** *and* ***completely.*** *Paste it on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18, N. Y.*

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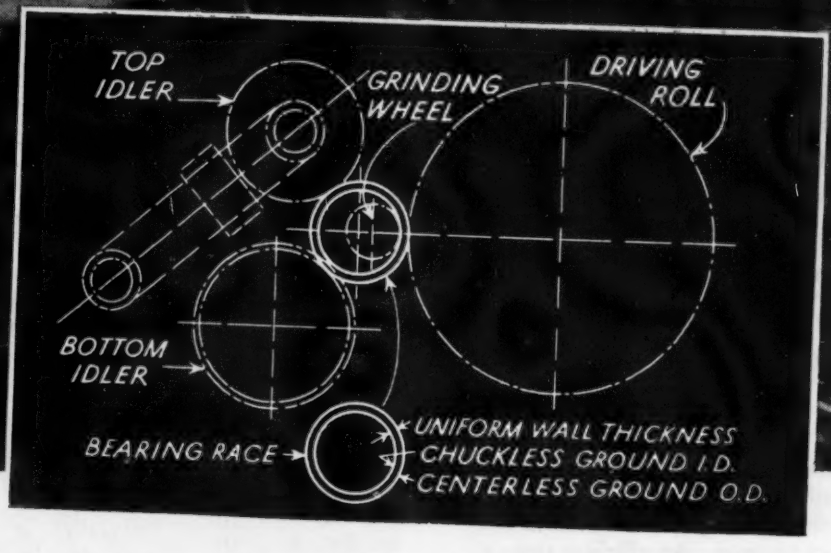

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This new principle invented several years ago by Hyatt Methods and Equipment Engineers we call "Chuckless Grinding." Thus into the machine we built the skill of the craftsman and precision manufacture at a mass production pace was born.

This is just another example of the many exclusive manufacturing processes which enable us to build accuracy, longer life and more dependable performance into Hyatt Roller Bearings for every application.

* * *

Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

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Stearns
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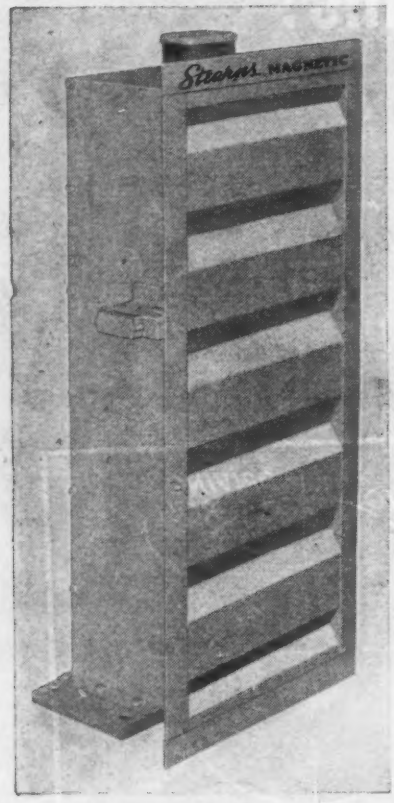

If you are bothered with tramp iron or metallic refuse in air blown material such as cotton, wool, shoddy, etc., investigate the merits of this thoroughly tried Stearns Air Duct Magnet. An efficient strong, automatic piece of magnetic equipment designed by a pioneer magnetic engineering firm. Write for details.

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646 So. 28 St. Milwaukee 4, Wis.

News of the month

May Settle Low-End Program. Before this issue gets into the mails there may have been a decision by John Snyder, director of the Office of War Mobilization and Reconversion on the low-end textile and apparel program over which WPB and OPA have been working in recent months. The various regulations and directives involved in this program have brought protests from the industry, and efforts by the Office of Economic Stabilization to settle differences have been fruitless.

A New Source of Power. The atomic bomb not only blew a hole in Japan on August 6, but broke open widespread discussion in industrial circles as to postwar possibilities of atomic energy for power. In Hiroshima the bomb damaged or obliterated three textile mills: the Teikoku textile mill completely destroyed, the Sumitomo rayon mill partially destroyed, and the Kinkwa rayon mill badly damaged.

Cotton Exchange Jubilee. The commemorative dinner held Aug. 15 by the New York Cotton Exchange to mark its 75th anniversary, as described in the previous issue of TEXTILE WORLD, had Secretary of Agriculture, Clinton P. Anderson, to head its panel of three speakers. The other two were Lt. Gov. Joe R. Hanley, of New York State, and Mayor Fiorello LaGuardia, of New York City. Honor guests included officials of Southern cotton exchanges and trade associations and heads of commodity and stock exchanges in New York. President William H. Koar, of the New York Cotton Exchange, presided.

A New Publication. A weekly newspaper covering the Southern division of the textile industry has been organized at Charlotte, N. C., under the management of John M. Mullen, publisher, and Stewart Atkins, editor. Mr. Mullen has for the last five years been in charge of industrial advertising for the Charlotte *Observer*. For a number of years previous he published *The Florida Grower* at Tampa devoted to the interests of the citrus industry. Mr. Atkins has been with the Gastonia *Gazette* since 1931, lately as managing editor and city editor. The new weekly, which is to be a non-technical publication, will be called *The Southern Textile News*. A sample issue was planned for early August with regular publication beginning early in September.

Yarn Men Resume Golf. The Chicago Yarn Men's Club held its twenty-first annual golf tournament on Aug. 1, at Barrington Hills Country Club, Barrington, Ill., after a recess of three years during which it gave to the Red Cross the funds which would have gone for the tournament. Because of the regional executive meeting of the National Association of Hosiery Manufacturers, held in Chicago, July 31, it seemed logical to resume the tournament this year. William N. Lamair, of Rubens & Marble, Inc., won the cup with low net of 71, and Lt. Glen Starke, R. Z. Beohmen, and Keith Chalmers tied for low gross with 88. The officers of the Chicago Yarn Men's Club are C. Walter Seidel, president; Arthur H. Emerson, vice president; C. F. Peffer, treasurer; and Fred W. Frank, secretary.

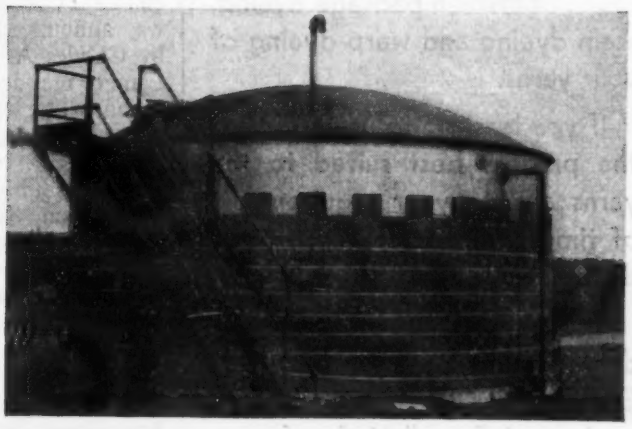
Training in Fashion. New angles and additions will broaden the scope of the sixth fashion training course, "Introductions to Careers in Fashion", now being planned by the Fashion Group, Inc., New York. Changes in the fashion picture, especially relating to fabrics and patterns, will be fully detailed. The course will be given on ten Wednesday evening sessions, Oct. 3 to Dec. 12, in the Beekman Tower, New York. A number of women prominently connected with textile mills will be among the speakers.

Meeting Cancelled. The fall meeting of the Fiber Society scheduled for September at the Philadelphia Textile School, Philadelphia, Pa., has been cancelled. The present over-crowded railroads, together with the fact that many of the society's members are outside the United States on special government assignments, caused the arrangements committee to recommend that the fall meeting be called off.

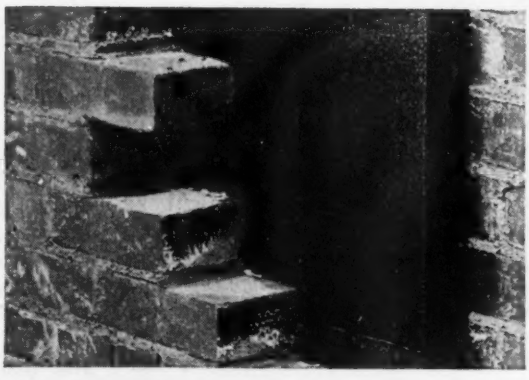
School Adds Machine Shop. The addition of a new machine shop to the Textile School of North Carolina State College, Raleigh, N. C., has been reported by Dean Malcolm M. Campbell, who said that the shop is designed to construct special apparatus and instruments for textile research projects now under way at the school. W. R.

PC FOAMGLAS, the permanent insulating material, helps to maintain desired temperature and humidity levels, to prevent condensation. It is fireproof, moisture-proof, verminproof and proof against most acids.

Consisting of millions of air-filled glass cells, PC Foamglas is light in weight, rigid and strong. The big pieces are conveniently packaged, easily handled, quickly installed.



PC Foamglas has proved the most efficient and truly economical insulation material for use on tanks and other large containers in the processing, chemical and petroleum industries.



In core walls, PC Foamglas becomes an integral part of the structure, can be tied in to brick, tile or other backing and facing. This material made of air-filled glass cells, does not pack down, slip, warp, or rot.

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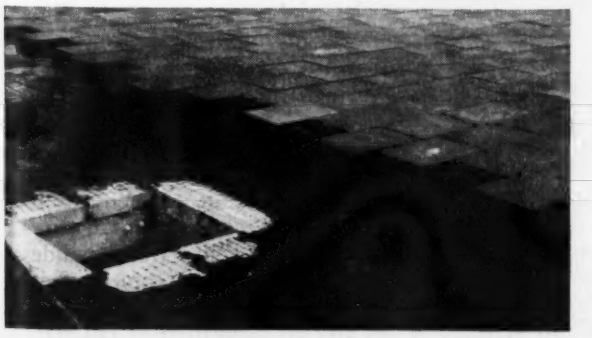
FIRST COST IS LAST COST

When you are figuring on insulation for roofs, floors, walls, tanks or plant equipment, learn why the most efficient, the most *economical material* is PC Foamglas. Free booklets are yours for the asking. Send in the convenient coupon today. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.



A firm, level base for roofing felt, PC Foamglas helps to maintain desired temperature and humidity levels, to prevent condensation.

It needs no expensive repairs or replacements, insulates efficiently, permanently.

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· *Also makers of PC Glass Blocks* ·

PC FOAMGLAS *Waterproof Fireproof* **INSULATION**

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Pittsburgh Corning Corporation
Room 669, 632 Duquesne Way
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Dear Sirs:

Roofs_____ Walls_____ Floors_____

Please send along my *free* copies of the booklets I have checked. It is understood that I incur no obligation.

*Name*_____

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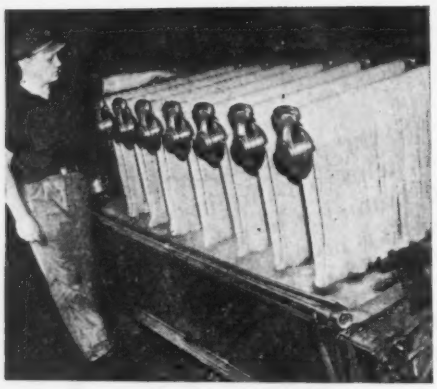
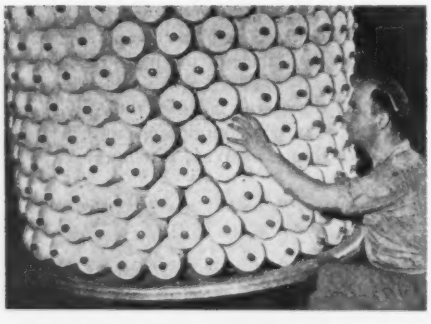


Here the Choice Is Yours . . . . .

. . . . . between package dyeing, skein dyeing and warp dyeing of your yarns.

If you leave it to us, we select the process best suited to the yarns and to your requirements of time and cost. Then let you decide.

This advantage of choice of dyeing methods is the result of Globe's varied and complete equipment for all kinds of yarn dyeing, and our long experience in giving customers just the dyeing service that fits best into their production needs.



"YOU CAN RELY ON GLOBE"

Globe DYE WORKS CO.

1865 1945

FRANKFORD, PHILA. 24, PA.

Jones of Raleigh has been employed to direct the new shop.

Converting Army Coats Into Jackets. Conversion of 100,000 wool-serge Army coats, now classified as limited standard, into wool field-jackets for Zone of Interior use in sizes where shortages in stocks will exist is now being done under government contracts by private manufacturers. Conservation of some 200,000 yd. of 18-oz. serge, long a critical fabric in the Army's clothing supply program, and cash savings of about $700,000 will be realized from the conversion of the 100,000 coats into jackets.

Buys Its Selling Agency. Wellington Sears Co., New York, has been purchased by West Point Mfg. Co., it was announced in a joint statement by Charles A. Sweet and George H. Lanier, presidents of the two corporations. The long relation between the two organizations is secured by this arrangement. No changes in personnel or policies are presently contemplated. Wellington Sears will continue its service to the mills now represented.

Georgia Betters Its Hygiene Work. N. V. Hendricks, Georgia Department of Public Health, was elected president of the newly-organized Georgia Section, American Industrial Hygiene Association, in a meeting held in Atlanta, Ga., recently. Dr. R. L. Brown was made vice-president and C. G. Bender secretary-treasurer. Maj. R. C. Thomas, of the U. S. Public Health Service, stressed the importance of correlating the medical and engineering approaches to industrial hygiene so that productive ability might be maintained at a high level. "Industrial hygiene", said Mr. Hendrix in his address, "is the maintenance of men". Keeping workers fit is even more important than keeping machines in order, for the workers run the machines, he said.

More Favor for Wage Incentives. Labor's traditional opposition to wage incentives is waning, according to A. C. Croft, president of the National Foremen's Institute, Deep River, Conn. He asserted that an employer who prefers piece-work will find it generally true that his employees have the same preference; conversely, where an employer prefers time-work, his employees likewise usually do. Mr. Croft stated that "some of the popularity of wage incentives during the war has risen out of its value as a device for giving workers increased earnings without contravening the Little Steel formula." But most of it, he claimed, "comes out of a genuine conviction among labor leaders that, provided certain standards are met, wage incentives increase workers' earnings, reduce grievances, and make for a more satisfied union membership."

Research Data Available. Research data of immense importance is being unearthed for the first time through the cooperation of the leading technical schools and universities. Master's theses that are of importance to industry and research will be indexed in the technical "Digest-Index," issued by The National Research Bureau, Inc., 415 North Dearborn St., Chicago 10. They will be supplied on microfilm through the Library of Industrial Research.

Cloth Salvage. Eighty-five million yards of cloth are saved each year by the Quartermaster reclamation program in the U. S. This total yardage saved is made up of more than 57,000,000 yd. of cotton goods (other than duck), some 25,000,000 yd. of woolens and worsteds, and more than 2,000,000 yd. of cotton duck, much of it damaged tentage, which is restored to usefulness.

QM Adopts Safety Color Code. Basis of the standard safety color code proposed for national use by the American Standards Association is the safety system now in use in Quartermaster and Army Service Forces Depots. Red, green, yellow, white, and black, and combinations thereof, were the colors finally agreed upon for the Quartermaster and ASF Depots. Red is used to identify fire protection equipment, and danger and stop signals. Green is the basic color for designating safety —the location of first aid equipment, dispensaries, stretchers, gas masks, and safety starting buttons. Yellow indicates the need for caution and marks physical hazards, such as obstacles which may cause stumbling, the projections of machinery, or pillars. Black, white or a combination of these two shall be the basic colors for designating housekeeping, sanitation, and traffic markings. Solid black, solid white, or either striped or checker combinations are recommended for direction signs, corners, passageways, stairways, dead ends, traffic guides, and refuse cans. Great care has been taken not to conflict with signals used in sea and air navigation or rail transportation.

Work-Stop Stages Issued by Army. Aside from the work-stop stages covered in the June issue of TEXTILE WORLD

Expand

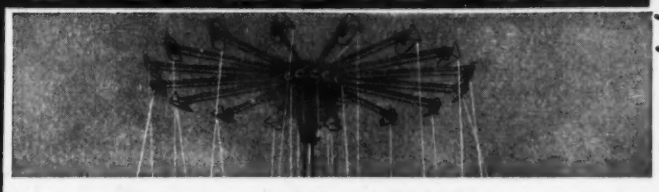
WITHIN YOUR PLANT

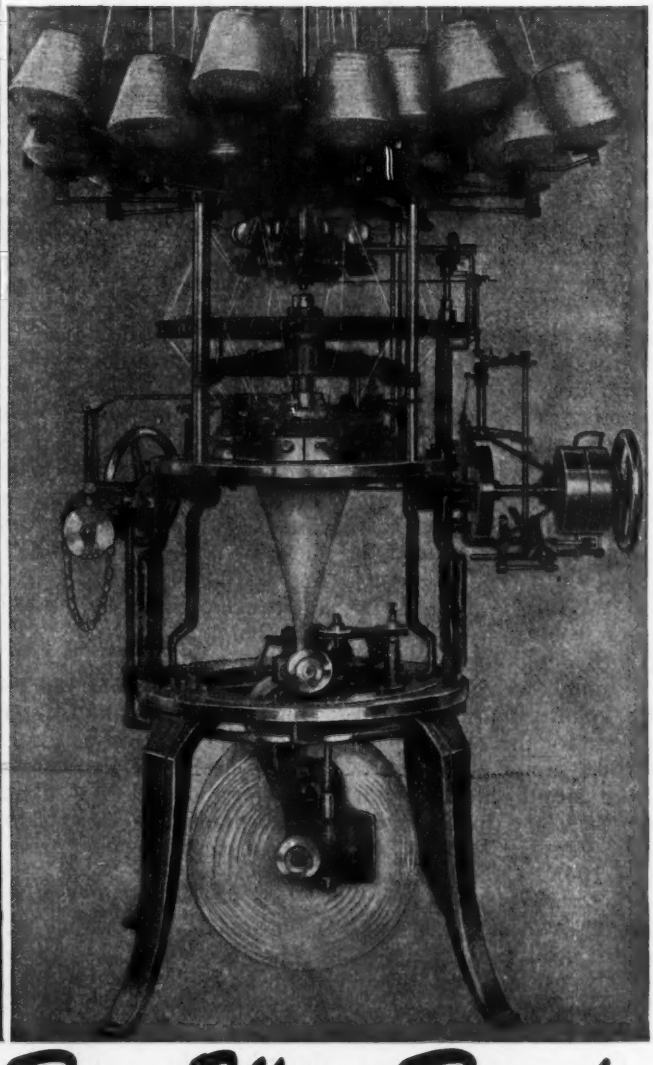
without

ADDITIONAL FLOOR SPACE AND

DOUBLE PRODUCTION

WILDMAN MULTIPLE FEED RIB MACHINE





No, you don't need another building to step up your volume. Just replace your 8-feed machine with this

WILDMAN
Multiple-Feed Rib
MACHINE

Yes, it's as simple as that! Without requiring even one inch more floor space—and using less than a third more power, this modern machine will permit you to more than DOUBLE YOUR PRODUCTION. And further:—it will deliver a finer, cleaner, more uniform product, and give you trouble-free performance. Ask about its many operational advantages and exclusive features.

WILDMAN MFG. CO., Norristown, Pa.

Buy War Bonds

Users of fluorescent lighting, engineers and maintenance men are improving their lighting service by switching to G-E Watch Dog Fluorescent Starters. These manual reset starters are providing efficient service and positive protection for 30-, 40- and 100-watt lamps in commercial and industrial installations all over the nation. Here are only a few of the many reasons why all three choose G-E.

1.

Users **are protected from annoying blink and flicker of dying fluorescent lamps once and for all. Blinking cannot possibly recur once the Watch Dog cuts out.**

2.

Lighting Engineers **specify G-E Watch Dog Starters because of their unusually long life. Under specified test conditions the FS-40 outlasts ten 40-watt fluorescent lamps.**

3.

Maintenance Men **prefer G-E because the Watch Dogs are loyal friends. They reduce lighting maintenance to the easy job of pushing a red button before relamping. Simply reset it . . . forget it.**

You can get the complete story about G-E Watch Dog Starters by writing to Section G852-109, Appliance and Merchandise Dept., General Electric Co., Bridgeport, Conn. G-E Fluorescent Accessories are distributed nationally by General Electric Supply Corp., Graybar Electric Company and other G-E Merchandise Distributors.

GENERAL ELECTRIC

for mills producing cottons and woolens and worsteds under contract, the Philadelphia Quartermaster Depot has just mailed to all other mills instructions covering stop points for their orders if pretermination contracts have not been entered into. These work-stop points cover circular-knit hosiery, underwear, sweaters, and yarns used in these fabrics.

Army-Navy Purchasing Office. According to Lt. Gen. Edmund B. Gregory, the moving of the major part of the Procurement Division and a minor part of the Transportation Division to the Army-Navy Purchasing Office in New York will result in the transfer of approximately 150 key workers and some 500 additional clerical personnel. Indicative of the value of this coordinated effort of the two services is the fact that the Navy reduced chambray shirt requirements from 1,800,000 to 400,000 per month and turned over a list of 19 manufacturers who tendered bids on shirts which it was not open to buy because of lower requirements. The Army took up 1,480,000 units of this production.

Textile Requirements Up—War Production Down. Before the 79th quarterly meeting of the New England Council, Walker Mason, regional director, War Production Board, stated the Army Service Forces expect a general reduction in procurement of 15% for June, increasing to 27% by December; for the first quarter of 1946 the reduction will be 35%; for the second quarter of 1946, approximately 40%. But the procurement of textiles will be increased. For example, cotton shirts will be up 139%. Military requirements for cotton textiles for the third quarter of 1945, on a one-front war, are now at new highs, above the yardage which the industry had been supplying for a two-front war, and requirements for wool and knit goods remain high. Redeployed troops are to be issued summer-weight uniforms while in this country and there will be a winter issue for the campaign in Asia. Meanwhile, supply of these textiles have been steadily declining in the last two years, and in the third quarter will be some 20% below the record high of 1942.

Mills Receive "E" Awards. Textile mills and related firms which recently received Army-Navy "E" awards include the following: Whitmire plant of Aragon-Baldwin Cotton Mills, Whitmire, S. C., fourth award; Cheney Bros., Manchester, Conn., fifth award; Ackshand Knitting Co., Ballston Spa, N. Y., first award; Atlanta Woolen Mills, Atlanta, Ga., third award; Textile Machine Works, Reading, Pa., fifth award; Mathews Cotton Mill, Greenwood, S. C., fourth award; Hemphill Co., Pawtucket, R. I.; B. A. Ballou & Co., Providence, R. I.; Spring Cotton Mills, For Mill, S. C., fourth award; Marshall Field & Co., Fieldale, Va., third award; C. H. Masland & Sons, Carlisle, Pa., fifth award; Dayton Rubber Mfg. Co., Dayton, Ohio.

Resins Eased. Urea and melamine resins have been freed of WPB controls as of the first of this month, except that certified orders for military work will get preferred shipment. Freeing order is M-340.

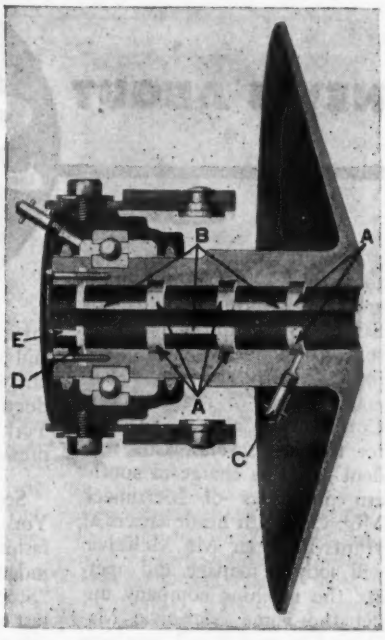
Radio Program Salutes Textile Industry. A special radio salute was given to the industry on the "Valley Forge Caravan" program over Westinghouse stations June 25. Hosts included representatives from H. W. Butterworth & Sons, Fidelity Machine Co., and Philadelphia Textile Manufacturers Association. The history of the industry was sketched and tribute was paid to the contribution of workers in the textile industry to the war effort.

Two Plants Win Safety Awards. Employees of the Waynesboro, Va., plant of E. I. du Pont de Nemours & Co., and of the Front Royal, Va., plant of American Viscose Corp. have won awards for outstanding safety records. Employees at the Du Pont plant completed 3,000,000 working hours without a major injury, and will receive awards of $2 in War Stamps. This represents the eighth major safety award earned by the plant since 1937. American Viscose has reduced its accidents by 40% in the last half of 1944 and has been awarded a certificate of safety achievement by the Department of Labor.

Veterans Speed Wool Top Production. Thirteen battle-wounded veterans from Camp Edwards Convalescent Hospital arrived in Bristol, R. I., recently to work for the Collins & Aikman Corp. in the production of wool top, under the auspices of the Army Service Forces Wool Top Special Project.

Burlington Honors Employees. Burlington Mills Corp. recently recognized approximately 3,000 employees for loyalty to the company by awarding service pins at special programs held throughout the corporation's plants in North Carolina, Virginia, and Tennessee.

A smooth, operating feature you would expect from SPEED-CONTROL PIONEERS



Disc Lubrication is simple, positive in a Lewellen *Variable-Speed* Transmission

● Note bore in disc hub sketched above. A series of annular grooves (A) are connected by channels (B) on alternate sides of the key. Grease enters at Alemite connection (C) and is forced through first groove, around shaft, to first channel which carries grease to the second annular groove. Again it passes around shaft to the next channel at opposite key side. This movement continues until grease has passed around all grooves, finally reaching space (D) where it passes around shaft and out at hole (E). Thus, an application of grease at (C) and fresh grease appearing at (E) means that all dirt and old grease has been cleared, for there are no dead ends or air pockets. Port (E) relieves grease channel of any built-up pressure from grease gun. Grease is not forced out between disc hub and shaft on disc face and belt.

This is just one of the highly important features of a Lewellen which result from more than 45 years' experience in speed-control engineering. Wire, phone or write for complete information!

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA

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REG. TRADE MARK

IN BETTER PLANTS EVERYWHERE

Package Dyeing Installation, Extracting and Drying in a complete cycle on the same material carrier

Builders of
Cotton & Wool Dyeing Machines

Stainless Steel Construction

FOR

BEAMS • CHEESES • PACKAGES
CONES • RAWSTOCK • SKEINS

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CENTRIFUGAL EXTRACTORS AND DRIERS

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CENTRIFUGAL PUMPS

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RAYON CAKE DYEING MACHINES

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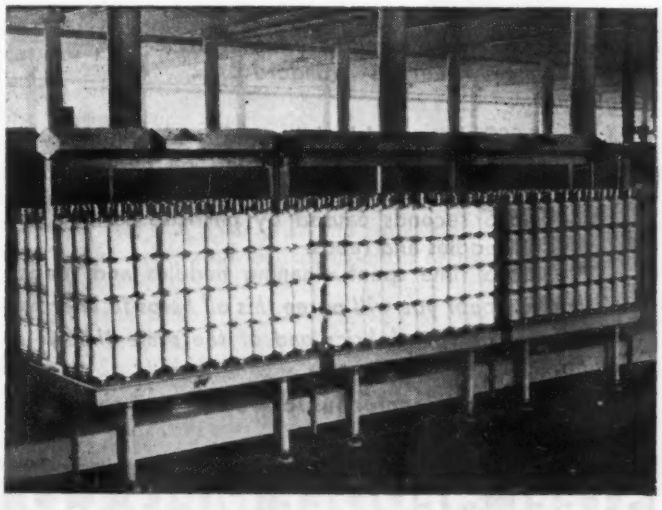
DYE SPINDLES AND PERFORATED TUBES



Stienen self-sealing package dryer

Standard Fabricators

INCORPORATED

355 WALTON AVENUE ● NEW YORK 51, N. Y.

says:

"If your Mill is operating on rayon, acetate or other yarns in this category"

Investigate

Ste-Hed-Co Stainless Steel Heddles & Reeds

If you have not done so—

Then you are not taking advantage of the additional savings that Ste-Hed-Co Stainless Steel Heddles and Reeds offer you.

Proven advantages that have been reported by mills already using the stainless steel as standard equipment:

LESS discarded heddles and reeds due to rust.
LESS accumulation of sizing on heddles and reeds.
LESS seconds caused by particles settling on heddles and reeds.
LESS time spent cleaning heddles and reeds.

Without a doubt you will agree this all helps to improve the quality of your fabrics and at the same time is a saving.

Do not hesitate to contact us for we desire to cooperate with you.

STEEL HEDDLE MFG. CO.
2100 W. Allegheny Ave., Philadelphia 32, Pa.
and
SOUTHERN SHUTTLES DIVISION
621 East McBee Ave., Greenville, S. C.

NEWS ABOUT *Suppliers*

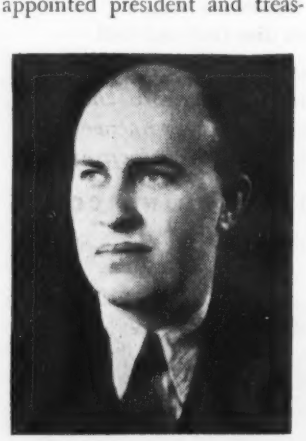
Stewart Machine Co. Gastonia, N. C., textile machinery and repair firm, operated by Edward S. Kempton, has been sold to Henry M. McKelvie, former vice president and general manager of the Firestone Cotton Mills at Gastonia and for the last several years resident agent in charge of southern properties of Merrimack Mfg. Co., with headquarters at Huntsville, Ala. Mr. McKelvie will actively manage and operate the machine company under the name McKelvie Machine Co., and it will continue to manufacture spinning, twister, and quiller bolsters, cast-iron ring bolsters, lifting rods, spindle whorls, cylinder journals, etc. It will service, repair, and rebuild textile machinery and appliances. The company was founded by Clyde Stewart and taken over by Mr. Kempton upon Mr. Stewart's death in an airplane accident. The Kempton Parts & Spring Co. will continue as in the past to manufacture Klenoil bolsters, knotter parts, and springs.

Alfred Hofmann, Inc., and **Alfred Hofmann & Co.**, West New York, N. J., and **Alfred Hofmann Needle Works**, Union City, N. J., have announced that the business founded by the late Alfred Hofmann will continue as heretofore. Carlos A. Hepp was appointed president and treasurer of the three companies, and Peter Schoenster, is secretary in charge of sales and production of the West New York plants as well as vice president of the needle works.

Scott & Wiliams, Inc., New York, have named three fashion authorities to serve as judges in the company's "Stocking of the Future" contest awarding $5,000 (maturity value) in war bond prizes for the best names suggested for the company's new postwar, no-seam, nylon stocking. The judges are: Betsy Talbot Blackwell, editor-in-chief of *Mademoiselle* magazine; Claire McCardell, American fashion designer; and Vevah Mears, associate editor of *Underwear & Hosiery Review*. The contest closed at midnight July 31.

S. C. Johnson & Son, Racine, Wis., has named Chester L. Boe as textile finishes merchandiser. He will make his headquarters in Chicago, and will be in charge of merchandising Drax, the Johnson water-repellent fabric finish. For the last ten years he has served as western manager of Talon, Inc., Meadville, Pa.

American Sheet Metal Textile Works, Dallas, N. C., has been issued a North Carolina

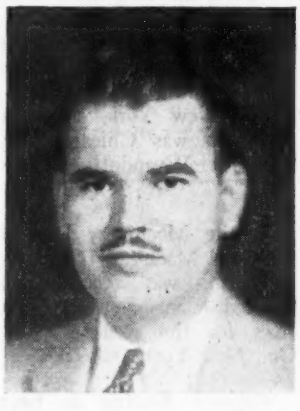


ONYX OIL & CHEMICAL CO., Jersey City, N. J., has elected Leon P. Brick (left) as secretary. He has been with the company for 18 years and in 1944 was appointed general sales manager. At the same time Albert R. Jenny (right) was appointed sales manager of the company which he joined in 1931. He spent nine years as sales manager of the Canadian branch of the firm. He returned to the states in 1942 and undertook special technical work in the field.

charter, with a capital stock of $50,000. L. M. Ingle is president; C. C. Walker, operator of the Walker Machine Shop, Dallas, is secretary and treasurer; and S. B. Dolley, Gastonia, N. C., is attorney. The company will deal principally in sheet metal work for manufacture and repair of textile machinery.

Richmond Oil, Soap, & Chemical Co., Philadelphia, has moved to larger quarters at 1041-43 Frankford Ave. Among the new projects planned is the extension of the research laboratories along with a pilot plant as part of the company's postwar planning program.

Link-Belt Co., Chicago, has appointed A. C. Fellinger as sales manager, power transmission machinery, with head-



DR. RAYMOND L. COPSON, formerly chief of chemical research and engineering for the Tennessee Valley Authority at Muscle Shoals, who has been appointed director of research for Rumford Chemical Works, Rumford, R. I.

quarters at the company's Ewart plant in Indianapolis. He succeeds the late C. Walter Spalding. The sale and application of Link-Belt silent chain drives will hereafter be headed up by H. F. R. Weber, divisional sales manager, silent chain drives, with headquarters at the Ewart plant. G. H. Woody continues as sales manager of the ball and roller bearing division, with headquarters at the company's ball and roller bearing plant in Indianapolis.

Airline Yarn Products Co., Gastonia, N. C., has been organized by D. W. Peach, who has resigned from Southern Winding Co., also of Gastonia.

Paisley Products, Inc., Chi-

W. H. ROBINSON, JR., who has been named manager of G.E. Lamp Department's advertising division with headquarters at Nela Park, Cleveland. He succeeds the late H. Freeman Barnes who directed G-E's lamp promotion and advertising activities.

cago, are enlarging and modernizing their four-story and basement plant at 1770 Canalport Ave., to meet increasing demands for synthetic-resin, rubber, and vegetable-base adhesives which serve both civilian and war packaging and fabricating requirements.

Westinghouse Electric Corp., East Pittsburgh, Pa., has acquired the B. F. Sturtevant Co., Boston, Mass., a pioneer in the design and manufacture of air-handling and processing equipment. The Sturtevant company becomes a wholly-owned Westinghouse subsidiary, operating as B. F. Sturtevant Co., a Division of Westinghouse Electric, thus uniting Sturtevant's mechanical and air-handling experience with the Westinghouse developments in air conditioning and its resources in the electrical field.

Hooker Electrochemical Co. has elected H. M. Hooker, its former president, as chairman of the board and E. R. Bartlett, former executive vice president, as its new president.

E. I. du Pont de Nemours & Co., Rubber Chemicals Division, Wilmington, Del., has reduced prices on several types of neoprene synthetic rubber latex by amounts averaging 30%. It is said that more will be available for such civilian uses as shoe adhesives, garters, and girdles.

Rumford Chemical Works, Rumford, R. I., on July 27 presented service pins to 203

of Greenville, S. C. Office

says:

Ste-Hed-Co Hard Chrome Slasher Rods

can improve efficiency in your Slasher Room, whether you are running the coarsest cottons or the finest rayons.

Light weight—for ease in handling Tubular construction to insure rigidity and reduce weight, perfectly flared ends to prevent catching warp ends, Hard Chromed to prevent rust and wear, with the result that the warp yarn passes without the slightest obstruction or friction, improving production and quality.

Call in your nearest representative and begin at once to enjoy the many advantages of this, "Another Quality Product," by Steel Heddle Mfg. Co.

Have one of our local men tell you about our unsurpassed facilities.

STEEL HEDDLE MFG. CO.
2100 W. Allegheny Ave., Philadelphia 32, Pa.
and
SOUTHERN SHUTTLES DIVISION
621 East McBee Ave., Greenville, S. C.

NOW AVAILABLE

Handy New

INFRARED UNITS

for Quick Heating

UP TO 800° IN SECONDS

OPERATES ON AC OR DC CURRENT

MODEL 60-000 HAND UNIT ONLY $7.50
MODEL 60-200 HAND UNIT WITH ADJUSTABLE ARM AND CLAMP TYPE BASE FOR MOUNTING $11.50

Think of the many places where you can use this "quick heat" utility tool in laboratory, maintenance and production operations. Directs Infrared radiant energy exactly where you want it for baking, drying, or preheating small areas. For instance, a temperature of over 800° F. can be applied to 20-gauge black metal, 1½" in diameter in 1½ minutes. Speedy, flexible, safe. Hundreds of uses in industry. Furnished complete with 375-watt 110-volt lamp, 18 ft. cord set, plug, and off-on switch — ready for use. Reflector is gold plated inside, gray wrinkle finish outside. Prompt delivery on immediate orders.

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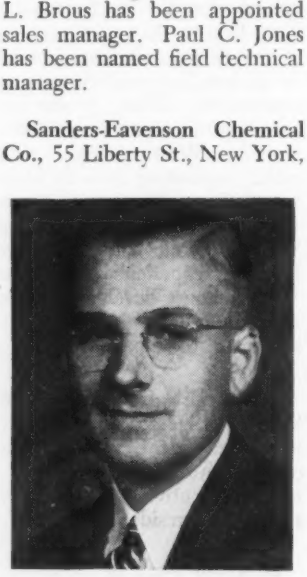
NEWS ABOUT SUPPLIERS

men and women of "The Rumford Family." Longest in length of service are Christopher Cute who received a 60-year pin, and Fred L. Thayer who has a record of over 55 years. Four others were awarded 45-year pins and nine got 40-year insignia. Recognition went down by fives to those of 5-year service. The company itself is 86 years old.

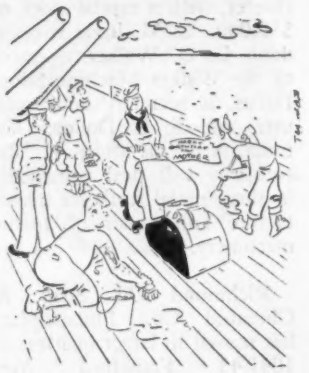
Monsanto Chemical Co., St. Louis, Mo., has transferred Dr. Wendell P. Metzner to its Central Research Laboratories at Dayton, Ohio. He has been research group leader at St. Louis of a group specializing in processes for organic intermediates. At Dayton, he will head the flexible-type high polymer group. H. L. Hubbard succeeds him at St. Louis. Francis J. Curtis, St. Louis, vice president of Monsanto Chemical Co., has been elected chairman of the American Section of the Society of Chemical Industry, an English organization of industrial chemists.

B. F. Goodrich Chemical Co., Cleveland, Ohio, has created a new division of activity for the promotion and sale of thermo-setting resins and Sam L. Brous has been appointed sales manager. Paul C. Jones has been named field technical manager.

Sanders-Eavenson Chemical Co., 55 Liberty St., New York,



ROBINSON ORD, of St. Louis, who has been appointed general manager of sales of the Organic Division of Monsanto Chemical Co. He was formerly an assistant general manager of sales and succeeds the late Fred C. Renner. Arthur P. Kroeger, of St. Louis, has been appointed an assistant general manager of Organic Division Sales and Charles H. Sommer, Jr., of St. Louis, will assume responsibility for sales of intermediates as well as plasticizers and resins.



AN ACCOUNT EXECUTIVE recently returned from the Navy to the Harold C. Walker organization, Minneapolis, Minn., in association with the account of the Tennant Co. After going into a huddle with an artist, he produced the above cartoon.

has been organized to produce Sandev specialty products and to offer a line of general chemicals by James W. Sanders and Marvin S. Eavenson. Mr. Sanders was recently sales manager of the Plastic Moulding Corp., New York, and Mr. Eavenson was Chicago manager for Wyandotte Chemicals Co.

Textile Machinery Division of Rudel Machinery Co. Ltd., Montreal, was recently appointed Canadian representatives for the Red-Ray Mfg. Co., New York.

Reliance Electric & Engineering Co., Cleveland, has appointed Standard Electric Motor Works, of Detroit, as distributors to supplement the activity of the company's district office in Detroit. In Milwaukee, the C & G Sales & Engineering Co. will extend the service of Reliance's central western sales district.

Dow Chemical Co. of Canada, Ltd., a subsidiary of Dow Chemical Co., Midland, Mich., will erect a plant near Sarnia, Ontario, Canada, for production of styrene monomer, a plastic base, from synthetic rubber.

Goodyear Tire & Rubber Co., Akron, Ohio.—Paul W. Litchfield, Goodyear's board-chairman, has just completed 45 years of service with that organization. He has received a 45-year company service pin from Goodyear president, E. J. Thomas.

Westinghouse Electric Corp. reports cancellation of its lamp license agreements with the

THEY'LL WITHSTAND REPEATED WASHINGS AND MILES MORE WEAR—AND *still* BE SOFT, SHEER AND ALLURING

if finished with

Dura Beau

REG. U. S. A. AND CANADA

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Yes, *DuraBeau* Finishes impart that magic "film of protection" which helps milady's hosiery to repel water and spots . . . and, *DuraBeau* Finishes are "tailored to fit the fibre or fabric". . . Millions upon millions of pairs of quality hosiery have given added beauty, greater satisfaction, and much longer wear because they were *finished with DuraBeau.*

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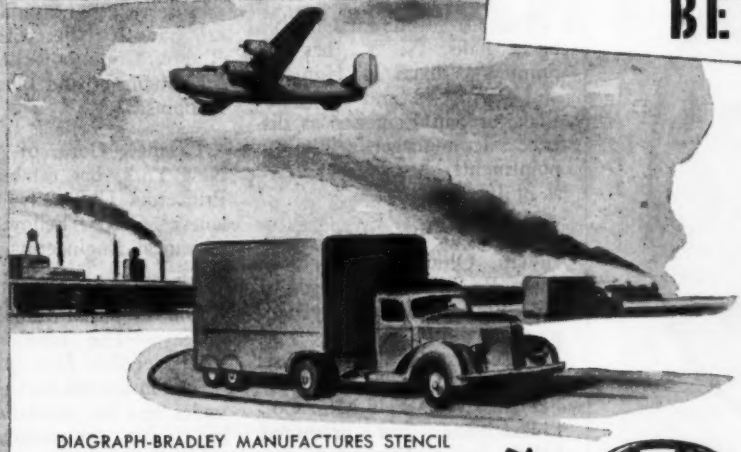
BETTER DELIVERIES



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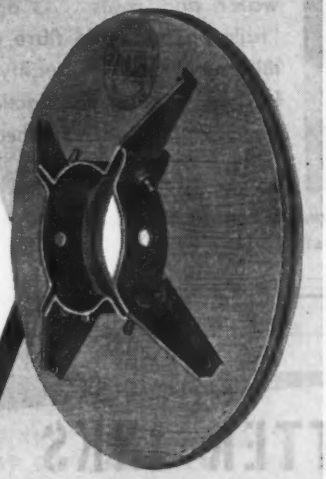
IF LOOM BEAMS

are WIDE

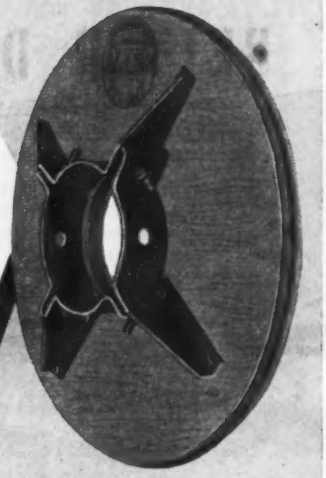
or NARROW

ALLEN ADJUSTABLE WOODEN LOOM BEAM HEADS

will save money



For Worsted or Cotton... Light weight... Unbreakable. Adjusts to any width. Simple clamping device makes 'em stay put.



Large diameters... up to 32"... permit larger packages. Keeps production at top speed. Cuts down tying-in time.

ALLEN

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Southern Rep., L. E. Wooten, Fort Mill, So. Carolina

NEWS ABOUT SUPPLIERS

General Electric Co., effective Aug. 1, 1945. Under terms of the dissolution, each company has granted the other a non-exclusive and unrestricted license entitling each to use lamp patents owned and controlled by the other up to and including Aug. 1, 1945.

Foster D. Snell, Inc., Brooklyn, N. Y., has added Miriam Lauren, formerly of the Rockefeller Institute for Medical Research, to its staff to take charge of a greatly enlarged micro-analytical laboratory.

Devoe & Raynolds Co., Inc., New York, has elected three new directors, Clarence W. Slocum, Roy A. Plumb, and Eric W. Peniston.

•

Worthington Pump & Machinery Corp., Harrison, N. J., has named Harry A. Feldbush, formerly works manager of the Holyoke, Mass., plant to become vice president in charge of engineering for the entire corporation. His headquarters will be at the general offices.

Homestead Valve Mfg. Co., Coraopolis, Pa., has appointed Don H. Krey as sales manager and Elliott G. Johnson as assistant sales manager.

Star Electric Motor Co., Bloomfield, N. J., has appointed Paul J. Moore as motor sales manager.

The Carborundum Co., Niagara Falls, N. Y., has appointed William H. Homeyer at Los Angeles, and Francis J. Blake at San Francisco as district sales managers. The appointments became effective as of July 1.

The Wm. Powell Co., Cincinnati, Ohio, has appointed Allen B. Stiles as manager of the Philadelphia and Baltimore territory, with offices at 1520 Locust St., Philadelphia.

Pennsylvania Salt Mfg. Co., Philadelphia, has promoted Ethel Serfas Klingman, formerly assistant manager of advertising, to be manager of advertising, succeeding H. M. Ellsworth, who resigned on May 1. Frank E. Murphy, formerly assistant to manager of research and development, has been appointed director of development division, research and development department. He will be located at Whitemarsh Research Laboratories. The following are additions to its research and development staff: Dr. C. E. Inman, formerly with Hooker Electrochemical Co.; H. S. Fisher, of Aluminum Co. of America; O. T. Aepli, of Attapulgus Clay Co.; E. P. Street, recent graduate of Yale.

BERNARD J. MILLER, who has rejoined the Impregnole Corp., subsidiary of Warwick Chemical Co., as assistant to Edward F. Stark, general manager. In addition, he will be in charge of promotional activities in the woolen field, relative to the sale and application of Impregnole, Norane, and other Warwick products. Mr. Miller has an honorable discharge from the Army after two-years service, largely in the Italian campaign.

Commonwealth Color & Chemical Co., Brooklyn, N. Y., has engaged Al Roy as salesman and technician. He has joined the firm's Chicago staff and serves the Middle Western trade together with Lester R. Fox, Commonwealth's Chicago manager and Charles M. Robbins.

Celanese Corp. of America, New York, has established at Princeton University the Celanese Corp. Fellowship in Chemical Engineering for five years.

Union Special Machine Co., Chicago—The June issue of *The Needle's Eye*, published by Union Special for the needle trades and for industries using bag-closing equipment, marks the 100th anniversary of the invention of the sewing machine and is a salute to the fourth largest industry in the United States, the sewing industry.

Spencer Lens Co., Buffalo, N. Y., has become the Scientific Instrument Division of American Optical Co. The former Spencer Lens Co. was purchased by American Optical Co. in 1935.

FACTORING
. . . of Tomorrow

Any minute, of any day—that's how close we are to a return to the stresses and uncertainties of competitive business . . . business that will see new innovations . . . new products . . . new markets. Changes will occur that every alert concern must meet.

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INFLAMMABILITY TESTS

The American Association of Textile Chemists and Colorists have outlined a "stop-gap" procedure and standards for testing the inflammability of consumer textiles. In accordance with these standards we have set-up the approved Flash Chamber and are prepared to conduct A.A.T.C.C. approved Inflammability Tests on consumer textiles.

A.A.T.C.C. SPECIFICATIONS COVER:

- Brushed Rayons for Wearing Apparel.
- Pyroxylin Coated Materials or Films for Wearing Apparel.
- Toys of Brushed Rayon and Pyroxylin Coated Materials.

Inflammability Test . . . . $5.00 per sample
(Submit ¼ yard of each fabric to be tested)

UNITED STATES TESTING COMPANY, INC.
ESTABLISHED 1880
HOBOKEN, NEW JERSEY
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Might be better to Clean by Hand

Rigged with ParksTurbo Traveling Cleaners, frames are blown off every three or four minutes.

Lint and fly do not get a chance to be spun into the yarn. They are shooed away.

Hand cleaning, done as often or as regularly, might be better. But what spinner would want to fan a frame (not to mention five or six) fifteen or twenty times an hour? Or who would want her to?

ParksTurbo Traveling Cleaners take the drudgery out of spinners' work—and earn their keep besides.

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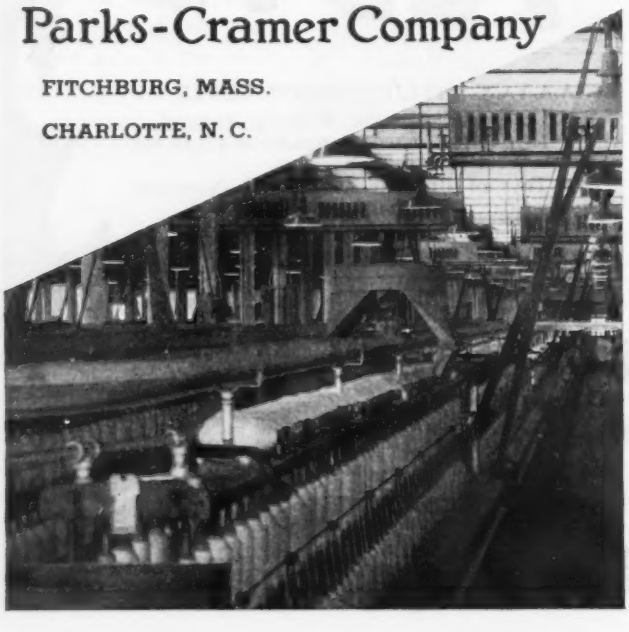
FITCHBURG, MASS.

CHARLOTTE, N. C.



NEWS ABOUT Mills

Cotton Mill News

Associated Textiles of Canada, Louisville and Montreal, Que., have awarded general contract for the construction of a weave shed to Angus, Robertson, Ltd., of Montreal. Estimated cost is $250,000. Plans call for one-story concrete building, 140x400 ft., to be built in Louisville.

Circle M Cotton Mills, Inc., Poulan, Ga., have been organized to take over and operate local Poulan Cotton Mills, acquired by Walter F. McCanless a number of months ago, who will head new company. The plant is scheduled to be converted to yarn manufacture in the early postwar period.

Clark Thread Co., Pelham, Ga., has purchased 62 houses and a number of city blocks from Hand Trading Co., bringing the total number of dwellings acquired by the company in East Pelham to 77.

Dominion Textile Co., Montreal, Que., plans large expenditures to replace worn and obsolete machinery and to provide for housing and efficient operation of new machinery in the firm's various mills.

Esmond Virginia Co., Waynesboro, Va., plans expansion in mill, with equipment installation to double present output.

General Webbing Corp., Springfield, Mass., plans a one-story addition, 78x200 ft., to cost approximately $90,000, with equipment. E. P. Dorgan, Springfield, is architect.

Hartford Spinning Co., Unionville, Conn., has begun erection of one-story addition, including improvements in present mll, for which general contract recently was let to Associated Construction Co., Groton, Conn., estimated to cost over $35,000. Buck & Buck, Hartford, Conn., are engineers.

Hathaway Mfg. Co., New Bedford, Mass., has awarded contract to T. Loranger & Son, New Bedford, for a 2-story brick addition, 25x50 ft. on Cove St. Plans are by F. P. Sheldon & Son, Providence.

Montreal Cottons Limited, Valleyfield, Quebec, Can., is not planning a one-story addition to cost about $65,000, as previously reported incorrectly in these columns.

Mount Olive, N. C.—A plant for weaving camouflage netting has been put into operation, with 350 to 375 operatives on the pay roll.

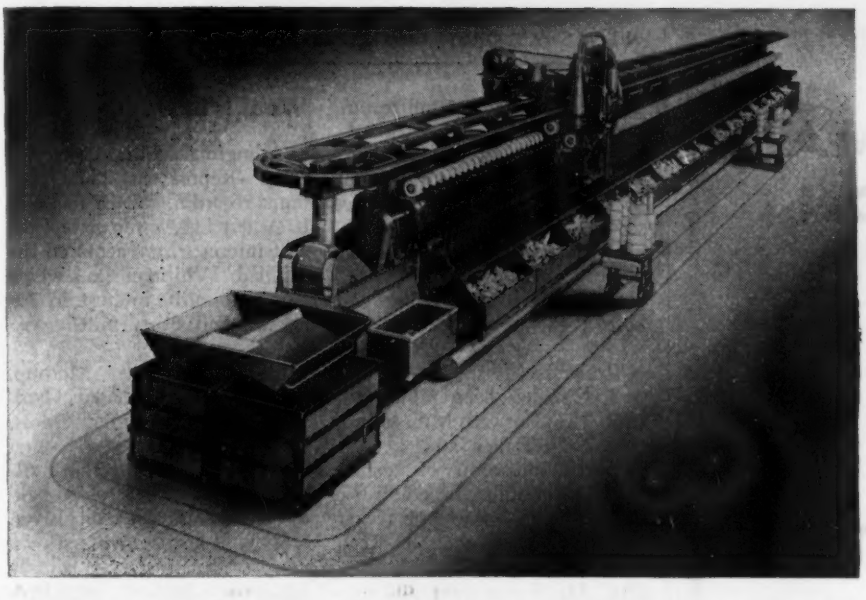
New Braunfels Textile Mills, Inc., New Braunfels, Texas, is completing construction of a one-story addition. Installation will include 116 looms, all new, and accessory equipment, and will cost more than $85,000. Robert & Co., Atlanta, Ga., are the engineers.

New England Industries, Inc., a subsidiary of New England Public Service Co., is receiving bids on industral properties which it owns including Bates, Hill and Androscoggin Mills, Lewiston; York Mill, Saco; Edwards Mfg. Co., Augusta.

Newera Mills Inc., a new Birmingham, Ala., corporation, has been formed to operate Birmingham Mill Co. The building and equipment will be modernized and a cost system installed by Barnes Textile Associates. J. R. Wikle will be local manager.

Pacific Mills, Boston, Mass., are planning additions at several of their Carolina mills. A one-story addition is being constructed to the Lyman, S. C., Division, with C. M. Guest & Sons, Anderson, S. C., in charge of the work. The company plans to operate a 54-loom worsted and woolen weaving mill in Carrboro, N. C., in the building formerly owned by Durham Hosiery Co.

Pilgrim Mill, Fall River, Mass., has filed plans for com-

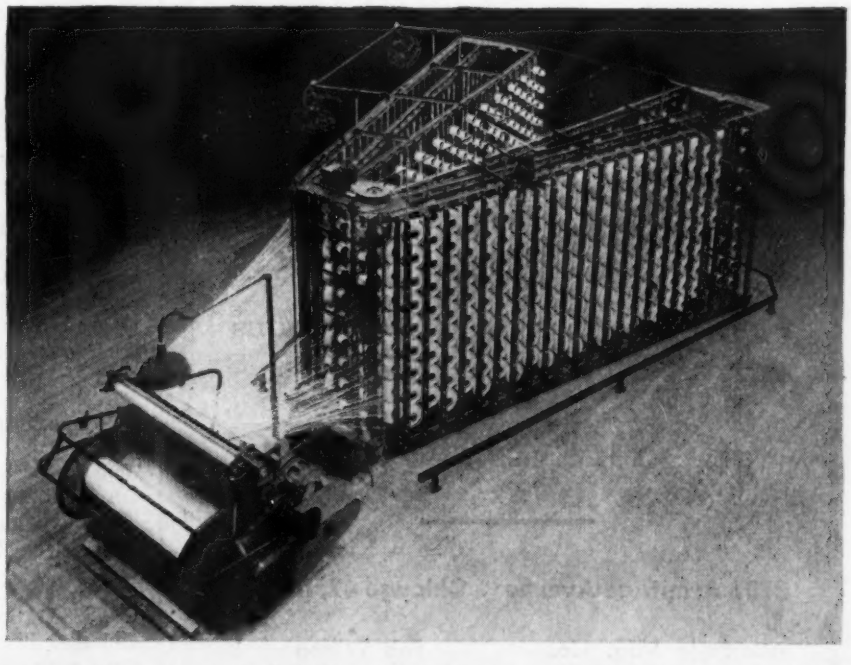


BARBER-COLMAN AUTOMATIC SPOOLER

THIS TEAM OF MACHINES MAKES BETTER GOODS

Barber-Colman Spoolers and Warpers are engineered to work as a *team* in the making of better beams that will produce better goods at lower cost. Actually, most of the benefits gained originate from the action of the Automatic Spooler, with important added benefits from the Super-Speed Warper. The Barber-Colman Spooler removes kinks pneumatically, ties in new bobbins with uniform, correctly-tied, short-tailed true weaver's knots, breaks out all gouts and slubs, and handles the yarn with low air-friction tension that preserves a maximum of original elasticity. The Warper winds at high speed under low uniform tension, making a firm, smooth concentric beam with yarn defects removed. Production efficiency is improved by a substantial reduction in warper stops and loom stops, as proved by exhaustive checks of actual mill production records, reducing seconds in the finished cloth. Barber-Colman equipment is a *must* for every modern mill that aims to meet coming competition!

BARBER-COLMAN SUPER-SPEED WARPER



AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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OSCAR HEINEMAN CORPORATION

Throwsters Of Yarns

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Quality Products for Over Fifty Years

We have learned from years of experience that the less handling required in the processing of yarns the more satisfactory the results in the Knitting and Finishing Departments.

Our mills are equipped with the latest developments in processing and labor saving machinery, thus assuring a minimum of handling of the delicate fibres.

We are prepared to process your yarns to best meet your particular needs.

For best results have your yarns processed the *Avconit way by

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plete modernization and reconversion of the 2-story plant, 128x310 ft., on Pleasant St. Work will include construction of a recreation room on the second floor, 60x80 ft. The mill will be equipped for manufacture of curtains after the war. F. Burton Michell, Foxboro, is the architect.

Roswell Mills, Inc., Roswell, Ga., has been purchased from the Roswell Mill Corp. by A. L. Fuller and C. E. Goodroe, operators of textile plants. The mill village and 65 dwellings for the operatives were included in the sale. Roswell Mills contain 8,600 spindles. Mr. Fuller owns and operates Art Valley Mills, Banning, Ga., and he and Mr. Goodroe own and operate Carolyn Mfg. Co., Whitesburg, Ga.

Russell Mfg. Co., Middletown, Conn., has let contract to Dennis O'Brien & Sons, Inc., Hartford, Conn., for one-story addition, 61x123 ft. It will be used as a research laboratory and will cost over $40,000, with equipment.

Southern Webbing Mills, Greensboro, N. C., have sold controlling interest to William H. Barnhardt, of Charlotte, and associates, and they have assumed charge of operations. Plans have been made to increase materially mill capacity after the war and orders have been placed for additional machinery.

Textiles, Ltd., Guelph, Ont., has begun new one-story spinning mill at Ormstown, Que., reported to cost over $100,000, with machinery. Erection contract was awarded to J. L. E. Price & Co., Ltd., Montreal.

Wampanoag Mills, Fall River, Mass., is making alterations to the 5-story stone mill, 70x300 ft., on Quequechan St. The Interboro Co., New York, N. Y., is doing the work.

Wayne Cotton Products Co., 2333 South Paulina St., Chicago, Ill., has been chartered with capital of $25,000, to manufacture cotton goods. Milton K. Joseph is principal incorporator.

Winnsboro Mills, Winnsboro, S. C., have let contract to M. B. Kahn Construction Co., Columbia, S. C., for one-story addition for office service. Cost reported over $25,000.

Wool Mill News

Arlington Mills, Lawrence, Mass.—Report in these columns regarding sale of this mill to Albert List was in error. The List interests have acquired the William Whitman Co., which has a minority interest in Arlington and other mills.

Corriedale Mills, Moosup, Conn., have purchased Gardner Yarn Co., Gardner, Mass.

Crown Mfg. Co., South Attleboro, Mass., heretofore held by Jacob Ziskind, Fall River, Mass., has been purchased by a new corporation, headed by James J. Axelrod, president, Airdale Worsted Mills, Inc., Woonsocket, R. I., who will be treasurer of new company. Joseph J. Axelrod is president. Operations will be continued without change.

Energetic Worsted Corp., Bridgeport, Pa., has plans for new one-story addition, including improvements in present mill to cost approximately $120,000, with machinery. J. Burton Myers, Merchantville, Pa., is engineer.

Gibson Woolen Mills, Inc., Tilton, N. H., are constructing an addition to No. 1 mill to replace the No. 2 plant which was destroyed by fire in April.

Hill Woolen Mills, Inc., Norwich, Conn., has been chartered with an authorized capital of $50,000 to manufacture woolens.

Liberty Wool Co., Woonsocket, R. I., has been chartered with capital of $100,000, to operate a local woolen mill. John R. Higgins, Woonsocket, is principal incorporator and representative.

Magee Carpet Co., Bloomsburg, Pa., has begun work on one-story addition, including improvements in present mill, for which contract recently was let to Edward Eyerman & Son, Wilkes Barre, Pa. Cost about $45,000.

Massachusetts Mohair Plush Co., Lowell, Mass., has plans for one-story addition to weave shed, reported to cost over $40,000, with equipment. Charles T. Main, Inc., Boston, Mass., is architect and engineer.

North Billerica Co., Lowell, Mass., recently opened a new

What Users Say About
AIR-PERME-ATOR

SYSTEM OF "DRY" HUMIDIFICATION

"Piece workers have increased their pay 10% to 15%".

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"Sorry we didn't put it in long ago".

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"Loom fixer just sits here reading a newspaper".

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"I appreciate the quick startings on Mondays and after holidays".

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"Employees are not affected in any way by summer heat".

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"No ends down. Waste baskets are empty on Mondays after we start up".

Let us send you the full story of AIR - PERME - ATOR, the newest system of economical humidification.

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8 Stout St., Paterson, 2, N. J.

NEW MODEL • HIGHEST ACCURACY CHRONOMETRIC TACHOMETER

Readability to 1 RPM per division. Guaranteed accuracy well within ½ of 1%. Indicates RPM directly on the dial without any calculations over a fixed period of 6 seconds. Negligible torque. Two models with ranges 0-1000 RPM or 0-10,000 RPM, each suitable for double rated range.

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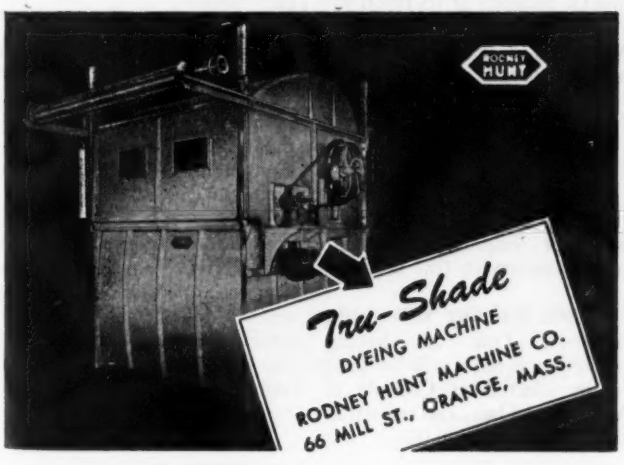

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Important letters or documents no longer need leave your plant for you can have extra copies in a matter of seconds. Every business, large or small, can profit by the use of an Orco photo copying machine.

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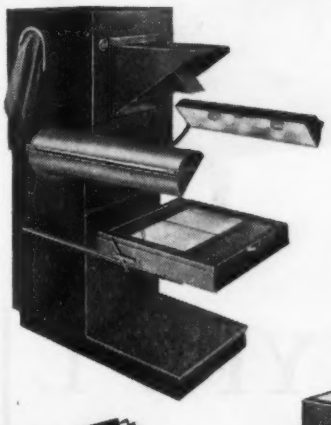

Left: Orco camera copies original: same size or reduced sizes from large originals.

Below: The Orco printer copies originals same size.

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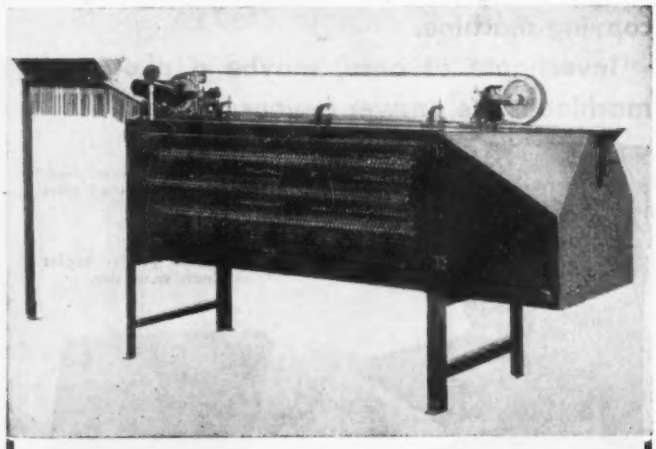

THE TYPE L

LOOM BOBBIN STRIPPER

for

RAYON YARNS

The **Terrell Machine Co.,** *Inc.*

CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . Canada
Geo. Thomas & Co., Manchester, Eng. . European Agent

two-story modern addition to the plant. The building is 118 x40 ft., and will house spinning, spooling, dressing, and winding departments.

Northwood Textile Mills, Inc., Philadelphia, Pa., have purchased all manufacturing facilities of La France Industries in Frankford, Pa., and will engage in the weaving of upholstery and drapery fabrics, and worsted and woolen fabrics.

Paragon Yarn Mills, Inc., 115 West Main St., Millbury, Mass., have been chartered with capital of 100 shares of stock, no par value, to operate a local mill. Cecil Aaronson is president and treasurer.

Rock River Woolen Mills, Janesville, Wis., have begun erection of one-story addition, 65x75 ft., for extensions in finishing division to cost about $25,000, with equipment.

Rayon & Silk Mill News

American Enka Corp., Enka, N. C., has awarded contract to Merchant Construction Co., Asheville, N. C., for new addition to main mill, to provide for considerably increased capacity. Another award has been made to Reed & Abee, Inc., Asheville, for a new reservoir at the plant.

Courtauds (Canada), Ltd., Cornwall, Ont., plans extensive postwar expansion, comprising a number of additional buildings for staple-fiber processing, reported to cost close to $5,000,000, with machinery.

E. I. du Pont de Nemours & Co. Wilmington, Del., has purchased the plant of Lincoln Fiber & Specialty Co., Newport, Del., to use for textile experimental facilities of its rayon division now located at Aberfoyle Mfg. Co., Chester, Pa. The Waynesboro, Va., plant of Du Pont began the construction Aug. 8, of two acetic acid recovery units.

La France Industries, La France, S. C., have plans under way for improvements and modernization in this unit.

Mason Spinning Mills, Ltd., Montreal, Que., are having plans drawn for a mill building to be erected at Cap de la Madeleine, Que., and estimated to cost about $200,000.

North American Rayon Corp., Elizabethton, Tenn., will install $380,000 worth of machinery for the manufacture of rayon tire cord.

Pembroke Mill, Pembroke, N. H., recently acquired by Textron, Inc., is engaged in rayon throwing for Suncook Mills division of the corporation, where weaving is done.

Sunspun Mfg. Co., Asheboro, N. C., has been acquired by Burlington Mills Corp., Greensboro, N. C.

Susquehanna Mills, Forsythe, Ga., are reported negotiating for the purchase of Ensign Mill, Forsythe, and plan to take over the mills about Sept. 1.

Synthetic Yarns, Inc., a new Delaware corporation, has purchased the Woonsocket, R. I., rayon plant of Manville-Jenckes Corp., and the throwing plant at Lowell, Mass., known as the Yarn Division of Textron, Inc. Officers of the new company are C. R. Steedman, president and treasurer; G. R. Lockhart, vice president in charge of the rayon plant; T. Leo Power, vice president in charge of the throwing plant; and Warren A. Seem, vice president and sales manager.

Knitting Mill News

Altamahaw Hosiery Mill, Reidsville, N. C., has completed plans for new one-story mill to cost $75,000.

Campbell & Helmich are starting construction of a one-story concrete and brick building on South Franklin Street, Boyertown, Pa., which will be 100x150 ft. The company will manufacture underwear and lace hosiery.

William Carter Co., Barnesville, Ga., has approved plans for expansion and improvements in different mill departments, with installation of equipment to increase output by about 50%.

Cranford Hosiery Mill, Asheboro, N. C., has plans underway for expansion. A building owned by C. C. Cranford, which has been occupied by the Old Dominion Box Co., will be vacated before Sept. 1, for use by the hosiery mill.

(*Continued on page 216*)

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Earn a Manufacturing Profit By Using the Best Machinery and Supplies

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A small percentage of Amysol-WS in your starch solutions will rapidly penetrate the size into the yarn and control dusting, reduce end breakage, facilitate and speed up your manufacturing process. Combines readily with virtually all sizing additives. Easy and simple to use and truly a compound of tomorrow available today.

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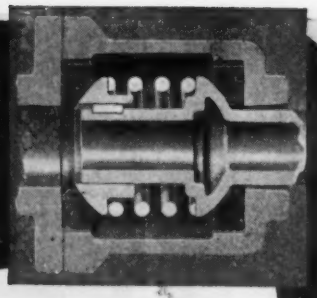

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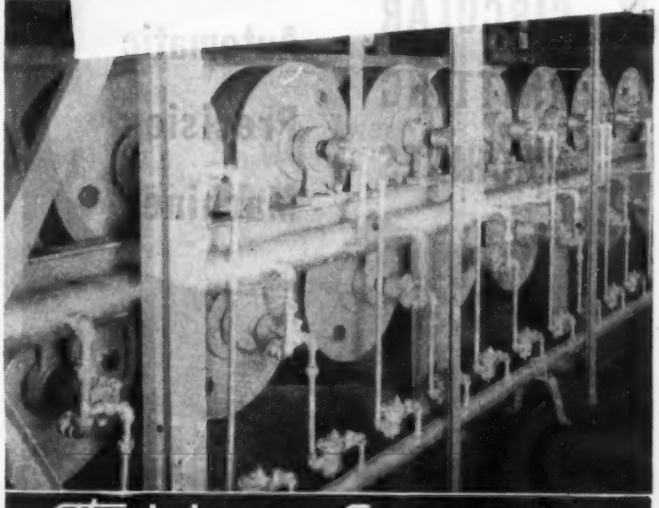
● Compared to the old style stuffing boxes and steam fits, the Johnson Rotary Pressure Joint is literally years ahead. Fortunately for wartime industry, it was ready and waiting when today's call for more and more production came along.

Its packless, self-oiling, self-adjusting, self-aligning design has released for other work countless man-hours otherwise needed for maintenance. It has saved much valuable production time otherwise lost when machines are shut down to repack stuffing boxes or repair the ravages of misalignment. The way it lends itself to modern methods of syphon roll drainage has helped to step up operating efficiency in hundreds of mills.

Today these time-saving, production-boosting features of the Johnson Joint are of first consideration. At the same time remember that the Johnson Joint can pay its own way out of savings. That will give you an idea of the peacetime possibilities of Johnson Joints, and of the mill that is equipped with them.

Write for complete information



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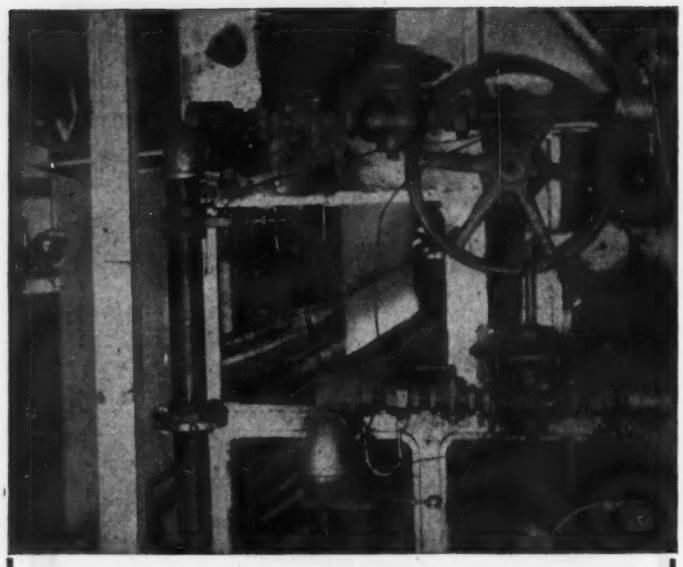

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NEWS ABOUT MILLS

Falston Hosiery Co., Burlington, N. C., lately organized, has begun operations in a building at 301 Anthony St., with about 5,000 sq.ft. floor space. Present output will be increased later. New company is headed by Coy McCuiston and Ralph Overman.

G. & H. Hosiery Mill, Inc., Hickory, N. C., is constructing an addition.

Hartford Rayon Corp., Rocky Hill, Conn., plans large postwar expansion, including additional buildings and equipment for considerably increased capacity.

Holeproof Hosiery Co., Milwaukee, Wis., is having plans drawn by Johnston & Rishter, Meridian, Miss., architects, for proposed new mill at Quitman, Miss., previously reported, estimated to cost over $100,000, with equipment.

Homestead Industrial Co., Jasper, Ala., has received six-months' option to purchase the Bankhead Homestead hosiery mill, smallest of three Government-financed plants on which Hess-Taylor-Kreiss Co. were highest bidders.

LaSalle Knitting Ltd., Plessisville, Que., is planning to erect an additional mill building 100x50 ft. The proposed addition will be two storys and used to house new knitting equipment to double present production.

Lehman Mills, Martinsville, Va., recently organized to manufacture knit goods, has begun operations in a two-story building at Ford and Depot Sts., secured under lease. E. P. Lehman is proprietor.

McGaugh Hosiery Mills, Dallas, Texas, have purchased Lone Star Hosiery Mills, San Antonio, Texas. The mill will be operated as the No. 3 plant of McGaugh mills and will increase the company's production 25%. McGaugh Hosiery Mills are expanding their No. 2 unit at New Braunfels, Tex., where present production will be tripled with the addition of 27 machines, purchased from Fox Chase Knitting Mills, Philadelphia, Pa.

Reading, Pa.—Nine hosiery mills in the Reading area plan to spend approximately $2,250,000 in the immediate postwar period for plant expansion and new equipment, according to a survey completed by the Manufacturers' Association of Berks County.

Rogersville, Tenn.—Lee Rayburn, of Morristown, Tenn., owner of four knitting mills, at Dandridge, Newport, Morristown and White Pine, Tenn., plans opening a mill at Rogersville, with 66 knitting machines, and an operating personnel of 150.

Strauss Knitting Works, 352 Sibley St., St. Paul, Minn., has let contract to Ben Feldstein Co., for alterations and improvements in mill.

Walridge Knitting Mills, formerly at Helena, Ark., have moved to Jonesboro, Ark.

Warner Hosiery Mills, Durham, N. C., newly organized with a capital stock of $100,000, plan for manufacture of women's hosiery.

Winona Knitting Mills, Inc., Winona, Minn., plan four-story addition, 22,000 sq.ft. floor space, to cost about $150,000, with equipment.

Wyomissing Hosiery Mills, Mohnton, Pa., is the name under which Luke A. Lutz and Estella B. Lutz have filed application for certificate to conduct a hosiery mill. Mr. Lutz resigned recently as treasurer of Leininger Knitting Mills, Inc.

Processing Plant News

Hanes Dye & Finishing Co., Winston-Salem, N. C., has received WPB and WMC approval to launch a new four-project expansion program which will add a total of 28,660 sq. ft. to its present plant. The program will include a 6,300 sq.ft., two-story addition to the bleach house; a 1,600 sq. ft., two-story addition to the machine shop; an additional 3,600 sq. ft. of warehouse space with expanded loading facilities, and a 17,000 sq. ft. extension to the main plant for added working space.

Plymouth Printing Co., Inc., is now in full production, utilizing 25,000 sq. ft. of space in the former White Mill, Fall River, Mass. **A. J. Sullivan** is treasurer and general manager.

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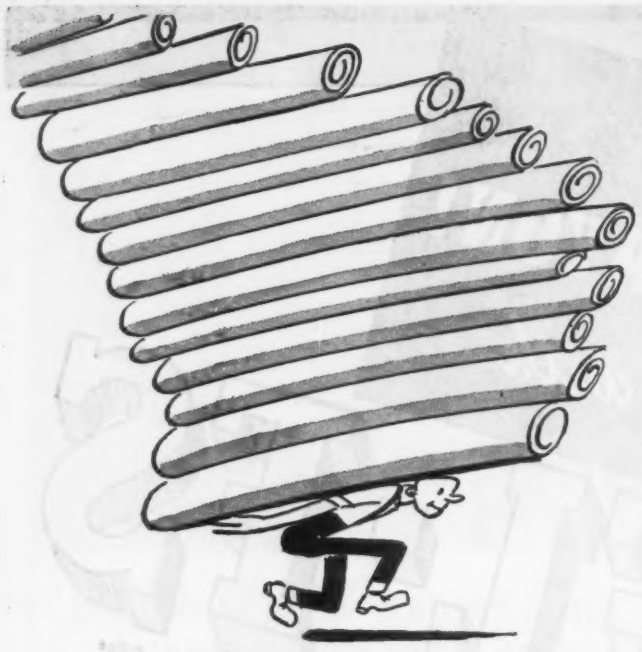

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in your post-war dye house

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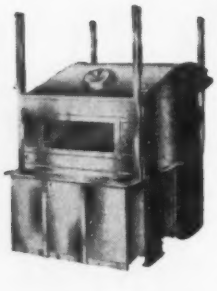
We have designed a new line of stainless steel textile dyeing equipment, which will give you more *lots per day* at lower cost per run. Special features of this equipment will cut cleaning time, make change-overs faster, while saving steam and water. Spotting and discoloration of fabrics will be ended, peak season business will be handled more easily and more profitably. *In planning your postwar dye house call a Blickman textile engineer.*



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Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

NEWS ABOUT *Men*

Henry E. Stehli has been elected president of Stehli & Co., Inc., New York, succeeding his father, the late Emil J. Stehli. He was formerly vice-president, and is the fourth in direct descent to become head of the concern.

Claude Elrod has been elected president of Boaz Mills, Boaz, Ala. Other officers are **Hugh M. Comer**, chairman of the board and treasurer; **Donald Comer**, vice-president, and **M. Leon Brock**, secretary.

W. M. Patten, vice-president of Sweetwater Hosiery Mills, Sweetwater, Tenn., is acting in the place of the president, Charles L. Clark, who died recently.

A. M. Dixon, president of Dixon Mills, Inc., Gastonia, N. C., at the recent commencement was awarded the degree of Doctor of Textile Science by the North Carolina State College, Raleigh, N. C.

William G. Sirrine has been reelected president of Textile Hall Corp., Greenville, S. C.; **Earle Stall** is vice president, and **Bertha M. Green**, secretary.

Miss Elsie Murphy has been appointed vice president and general manager of S. Stroock & Co., Newburgh, N. Y. She has been a vice-president for five years, having joined the company as a stenographer in 1930.

Kenneth B. Cook has joined Crown Mfg. Co., Pawtucket, R. I., as of Aug. 1, to become vice president and general manager of its new plant in Pawtucket. Mr. Cook has just resigned from Manville-Jenckes Corp., where he has been in charge of all manufacturing for the last 18 years. He has been succeeded as a director at Manville-Jenckes by **W. H. Haskins, Jr. Samuel Lipson**, formerly secretary and assistant treasurer, has been made treasurer and a director.

Alfred C. Werner is resigning as assistant general sales manager of American Viscose Corp., N. Y., to become president of Fabritex Corp., N. Y., textile exporters. Before joining American Viscose in 1929 he was for seven years connected with W. G. Davidson & Co. and H. F. Stein Co., raw wool dealing concerns, in Philadelphia.

Carl C. Mattmann, Jr. of A. M. Tenney Associates, New York, has been elected president of the Alumni Association of Philadelphia Textile Institute.

Dumont Bunker, a director of Burlington Mills Corp., and associated with that organization for many years, retired recently.

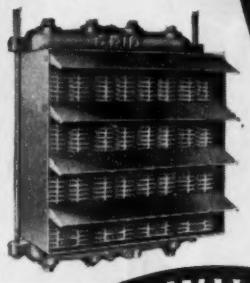
E. B. Grover, head of the yarn department of the Textile School of North Carolina State College, Raleigh, N. C. has gone to Germany to study wartime developments in textile processing and machinery. He will serve as a member of a joint commission sponsored by the War Department and the Technical Industrial Investigating Commission.

Dr. Frank T. DeVyver, vice president of Erwin Cotton Mills Co., Durham, N. C., has been named on a committee to assist the Civil Service Commission in the Fourth Region in obtaining qualified government administrative officers and in making advantageous use of returning veterans. The region embraces Maryland, Virginia, North Carolina and the District of Columbia.

Herbert Funderburk, general supervisor and assistant superintendent of Nebel Knitting Co., Charlotte, N. C., since 1923, has organized the Woodcrest Knitting Mill at Charlotte, which has purchased machinery from Sterling Hosiery Mills, Spindale, N. C., and has retained Crescent Hosiery Mills, of New York, as its selling agent.

Richard DeVine, of North American Rayon Corp., Fall River, Mass., was recently

INSTALL UNIT HEATERS THAT WILL *not* PLUG UP WITH LINT.. DUST ETC.



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These perfectly balanced, practically indestructible Hubbard stainless steel spools and bobbins have everything you demand in this type of equipment. Of electro welded construction, they are easily cleaned and always remain completely corrosion resistant.

Hubbard stainless steel spools and bobbins render remarkably long service. In one typical mill, service replacement in more than four years amounted to only one-half of 1%.

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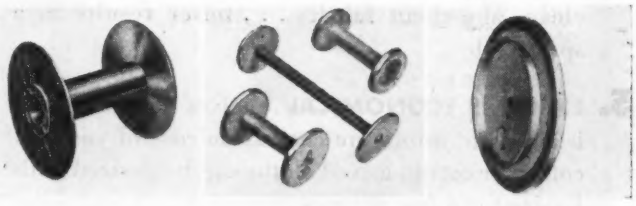
Other Hubbard Textile Mill Products



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These warp-proof, break-proof and split-proof spools withstand the terrific strains of even the severest kind of service.

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NEWS ABOUT MEN

elected president of the Rayon Yarn Peddlers Association of New England.

William H. Bradshaw has joined Tubize Rayon Corp. as technical consultant and will have his headquarters in the New York offices. He was formerly in the rayon department of E. I. du Pont de Nemours & Co., as director of research, and was awarded the Schoellkopf Medal of the American Chemical Society for outstanding technical work in developing high-strength rayon yarn.

M. A. Bearden has become assistant treasurer of Cliffside Mills, Avondale, N. C., and Cliffside, N. C. He was formerly general manager and vice president of Pomona Mfg. Co., Greensboro, N. C.

A. B. Elliott, formerly assistant general superintendent Pacific Mills, Columbia, S. C., is now agent at Merrimack Mfg. Co., Huntsville, Ala., succeeding **H. M. McKelvie,** who recently purchased a machinery business in Gastonia, N. C., to be known as McKelvie Machine Works.

H. M. Hixson has been elected vice-president of Big Jack Mfg. Co., Bristol, Tenn., in charge of plant management and production. He had been director of production. **N. S. Richardson** has been elected treasurer, and will also continue as office manager.

Henry C. Ball, who has served with the War Manpower Commission for the last three years as supervisor of the Southeastern Regional and Florida State Offices has become executive director of Tufted Textile Manufacturers' Association, newly organized, at Dalton, Ga. Officers elected are president, **R. Carter Pittman;** vice-president, **O. R. Strain;** treasurer, **L. S. Woodson,** all of Dalton.

J. Milton Brindley was elected assistant treasurer of Elton Fabrics, Providence, R. I., recently. He was formerly assistant treasurer of Grosvenordale Co.

Edgar K. Moses has been made director of sales of Native Laces & Textiles, Inc., and will act as coordinator of the merchandising divisions of the company.

E. R. VAN VLIET recently appointed executive vice president of Tubize Rayon Corp., New York, who at same time marks his 25th year with the company. The company has been organized into seven departments.

Chester Lord has resigned as head of Department 3, American Woolen Co., and has been suceeded by **Edwin Tilley,** who joined American Woolen Mills several years ago as styler.

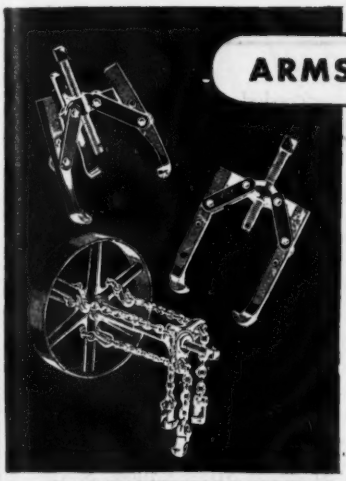
Robert S. MacCallum has resigned after 14 years with Clarence Whitman & Sons, Inc., in the sales department of Wilkes-Barre Lace Mfg. Co., to become sales manager of Fall River Curtain Co., Inc., New York.

Gustav Zellnik has resigned recently as technical supervisor at S. Stroock & Co., Inc., Newburgh, N. Y. He not only had charge of all departments from raw-material to finished yarn, but he modernized the carding and spinning equipment and had carding-machines built according to his own designs. He has not made known his future plans.

Harry H. Barker, formerly with Amoskeag Fabrics, Inc., has joined Ashland Corp., Jewett City, Conn., as plant superintendent, succeeding **Karl Reaber,** who is now with Verney Mills.

Robert B. Lockhart, office manager of Suncook Mills division of Textron, Inc., at Suncook, N. H. has been promoted to assistant to the comptroller of the division at Providence, R. I.

Edward S. Cobb, at one time purchasing agent of Sidney Blumenthal & Co., Inc., rejoined that organization early last month. He is in charge of the spinning divisions at Valley Falls and Woonsocket, R. I.



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STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special models. 34 types and sizes.
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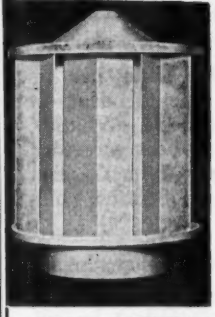

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NEWS ABOUT MEN

Joseph C. Cobb has resigned as general superintendent of Startex Mills, Tucapau, S. C., and is now with Pacific Mills, Columbia, S. C., as assistant general superintendent. He is succeeded by **W. M. Allison**, assistant superintendent at Startex.

Betty Jane Abernethy, of Forest City, N. C., has been selected to receive the first 4-year scholarship provided by the Abraham and Charles Erlanger textile scholarships at North Carolina State College, Raleigh, N. C.

Rollins Jolly is new superintendent of American Thread Co., Tallapoosa, Ga. He was formerly associated with Bibb Mfg. Co., Columbus, Ga.

Miss Ernestine Nelson, a recent graduate of North Carolina State College and daughter of **Ernest Nelson**, in charge of textile courses at University of Southern California, and niece of **Dr. Thomas Nelson**, former dean of Textile School, North Carolina State College, has recently accepted a position with S. Stroock & Co. Miss Nelson will be located in the New York office.

John Brown is now spinning overseer at Hamilton Woolen Mills, Yantic, Conn., He was formerly with Furman Woolen Mills, Oak Valley, R. I.

Edward R. Hopkins has resigned as dyehouse manager, Stonecutter Mills, Spindale, N. C., to head operations of Patchogue Dyeing & Finishing Works, Patchogue, N. Y.

Harry F. Wynn, general superintendent of Mandeville Mills, Carrolton, Ga., for the last 38 years, recently resigned from active duty with the company, but will remain in an advisory capacity.

J. T. Byrum has accepted the position of superintendent of Peck Mfg. Co., Warrenton, N. C.

L. M. Pearson has become superintendent of weaving at Phenix Mills, Inc., Kings Mountain, N. C., succeeding **S. M. Proctor.**

J. E. Lindsay, Jr., has resigned as carding superintendent at Arlington Mill, Gastonia, N. C., to become carding and spinning superintendent at New City Mills Co., Newton, N. C. He has been succeeded at Arlington by **George Plemmons**, formerly with the Arkray unit of Textiles, Inc., Gastonia.

L. D. Allen, formerly with Hampton Spinning Mills, Clover, S. C., has become superintendent of spinning at Calhoun Mills, Calhoun Falls, S. C.

W. T. Morton has resigned as assistant superintendent and general overseer of carding and spinning at Ottaray unit of Monarch Mills, Union, S. C.

Zeb V. Simmons, formerly of McColl, S. C., has become general superintendent of weaving at Ottaray Textiles, Inc., Anderson, S. C.

Carroll B. Little has resigned as superintendent of Whitney Mills, Inc., Whitney, S. C., and has been succeeded by **T. C. Drew**, formerly plant superintendent of Startex Mills, Tucapau, S. C.

O. H. Hankins has resigned as superintendent of Harden Mfg. Co., Gastonia, N. C., and has become superintendent of Superior Yarn Mills, Mount Holly, N. C., succeeding **W. A. Autrey. M. B. Baldwin**, formerly assistant superintendent of the Harden plant, is now superintendent.

W. R. Connelly has been promoted to assistant general superintendent of Spindale Mills, Inc., Spindale, N. C.

W. C. Love has become night carding and spinning superintendent at Globe Mills Co., Mount Holly, N. C., succeeding **M. B. Bumgardner**, who has become head of the same departments in the day time. Mr. Love was formerly with Ranlo Mfg. Co., Ranlo, N. C.

O. A. Mace has become superintendent of the Eureka plant of Springs Cotton Mills, Chester, S. C., succeeding **Eugene F. Robbins**, who recently resigned to accept a position at Thomaston, Ga. Mr. Mace has been overseer of weaving at Spartan Mills, Spartanburg, S. C. He was succeeded there by **D. H. Roberts**, formerly overseer of weaving, print cloth division, Startex Mills, Tucapau, S. C.

R. K. Mitchell, former superintendent of Webster Mills of American Woolen Co., Webster, Mass., has resigned.

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Cotton yarns, single and ply
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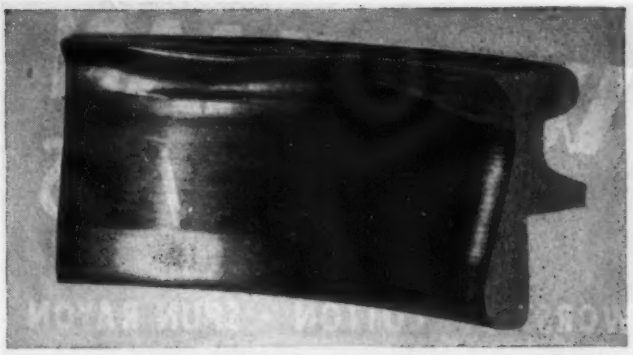

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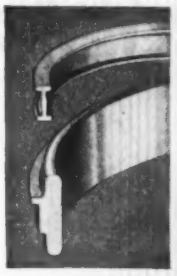

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NEWS ABOUT MEN

A. R. King, formerly with Steele's Mills, Rockingham, N. C., has become associated with Mooresville Cotton Mills.

W. O. Ruffin, formerly superintendent of Bama Cotton Mills, Enterprise, Ala., is now superintendent of Moultrie Cotton Mills, Moultrie, Ga.

C. A. Lominack, who for the last ten years has been with Bama Cotton Mills, Enterprise, Ala., is now with Moultrie Cotton Mills, Moultrie, Ga.

Charles D. Calhoun, an official of Chatham Mfg. Co., Elkin, N. C., for the last several years, has gone to Europe where he will manage a reconstructed textile mill in Germany for the U. S. Government.

R. L. Swetenburg has joined Johnson & Johnson Mfg. Co., as assistant general manager of the company's Chicopee Mfg. Co., Gainesville, Ga. He was formerly general superintendent of Ware Shoals Mfg. Co., Ware Shoals, S. C.

J. R. McInvaill has been elected secretary-treasurer and general manager of Gastonia Full-Fashioned Hosiery Mill, Gastonia, N. C., succeeding **Robert Jackson,** who recently resigned. **Mrs. Nell M. Lavender,** who has been with the company since its organization, has been elected assistant secretary-treasurer and office manager.

J. E. Bostick has become general manager of Crest-Tex Mills, Inc., Russellville and Haleyville, Ala.

Thomas K. O'Neill, executive assistant in the Textile Price Branch of OPA, has succeeded **Herbert Walmsley** as acting head of the Cotton Goods Section of OPA.

Robert B. Lockhart, office manager of Suncook Mills division of Textron, Inc., Suncook, N. H., has been promoted to assistant to the comptroller for the same corporation in Providence, R. I.

E. S. Nickerson, assistant manager of the fabrics division, E. I. du Pont de Nemours & Co., Wilmington, Del., has been appointed assistant general manager of the fabrics and finishing department in a general reorganization of that division. **Dr. H. H. Hopkins,** director of the Philadelphia laboratory, is manager and **Matt Denning,** has become assistant manager.

Ed Simmons has been promoted to general superintendent of carding, spinning and winding at Yadkin Mills, Inc., Patterson, N. C., from head of the carding department, and **W. H. Dooley** has been similarly promoted on third shift at the same mills.

Frank L. Jackson, of Davidson, and **Carl A. Rudisill** of Cherry, N. C., have been named to a seven-member board of trustees for the North Carolina Vocational Textile School, Belmont, N. C., for four-year terms. Other trustees appointed by the governor include: **John F. Matheson** Mooresville, and **C. A. Cannon,** Concord, three-year terms; **O. M. Mull,** Shelby, chairman, and **J. Harold Lineberger,** Belmont, two-year terms.

R. F. Jessen has resigned as superintendent of Stanley Mills, Inc., Stanley, N. C., to engage in research work at Callaway Institute, Inc., LaGrange, Ga., and has been succeeded by **W. A. Scott.**

George Chappelle, formerly superintendent of Bellville Woolen Co., Allenton, R. I., is now with Madison Woolen Mills, Madison, Maine.

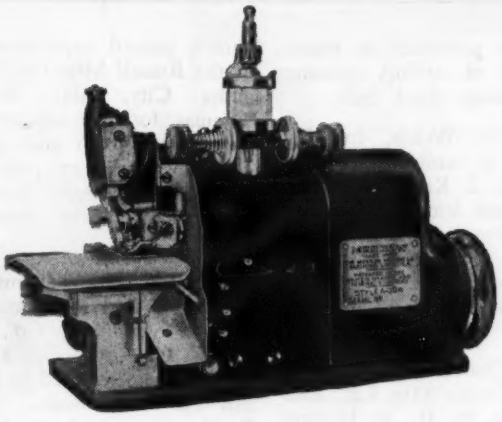
Harry Mack of the dyeing department of Arlington Mills, Lawrence, Mass., has joined the Wuskanut organization in Farnumsville, Mass., in the same capacity, succeeding **James Souter** who goes to Botany Worsted Mills, Passaic, N. J.

John J. Bourgault, has become spinning overseer at Nashawena Mills, New Bedford, Mass.

J. Alton Powers has been made carding overseer at Sebago Woolen Mill, Bridgton, Me.

Leon A. Smith has been made finishing overseer of Robinson Mfg. Co., Oxford, Me. and **Alexander P. Nicholson** overseer of dyeing.

Ed Simmons has been promoted to general superintendent of carding, spinning, and winding at Yadkin Mills Patterson, N. C. **W. H. Dooley**



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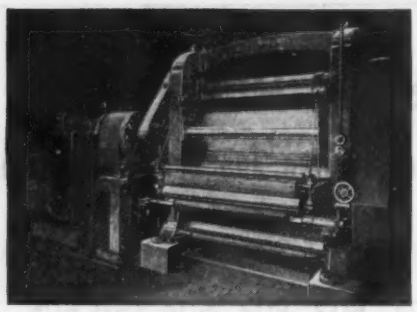

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Resulting from Leaky Roofs.

DEVOE PAINT

787 FIRST AVENUE, NEW YORK 17, N. Y.

has been promoted to superintendent of carding, spinning and winding, third shift.

Carl D. Welch, formerly overseer of carding at Phenix Mills No. 2, Kings Mountain, N. C., and later of American Yarn & Processing Co., Mount Holly, N. C., has become overseer of carding at China Grove Cotton Mills, China Grove, N. C.

Earl Charette has left Cocheco Woolen Mfg. Co., East Rochester, N. H., to become assistant overseer in the dye room of a mill in Winthrop, Me.

Eugene F. Robbins, formerly superintendent of Eureka Mill, Chester, S. C., unit of Springs Cotton Mills has become manager of Thomaston Cotton Mills, Griffin, Ga., succeeding **Floyd Watson.**

Hines Samuel Richardson has become weaving superintendent at S. Slater & Sons, Slater, N. C.

Herbert J. Woods, formerly superintendent, Mill No. 6, Riverside Cotton Mills, and prior to that mantenance superintendent at Riverside & Dan River Cotton Mills, Danville, Va., has been appointed maintenance manager for all Burlington Mills in North Carolina and Virginia.

L. C. Wallace has been promoted from third shift overseer of carding to third shift superintendent at Goodyear Decatur Mills, Decatur, Ala.

W. E. Ellenburg has been promoted to carding overseer at Beaumont Mfg. Co., Spartanburg, S. C.

Jeff H. Robbins, formerly assistant superintendent, Gaffney Mfg. Co., Gaffney, S. C., has become carding and spinning superintendent, Riverside & Dan River Mills, Danville, Va.

M. D. Link has been transferred from the position of assistant superintendent, Goodyear Decatur Mills to the same position at Goodyear Clearwater Mills, Rockmart, Ga.

Henry E. Littlejohn has become superintendent of Carter Fabrics Corp., South Boston, Va., unit. He was formerly superintendent of S. Slater & Sons, Inc., Slater, S. C.

T. S. Harris, formerly with Tallassee Mills, has been named general superintendent of the Russell Mfg. Co., Alexander City, Ala. **Russell Thomas,** formerly superintendent of the No. 6 unit of the company, has been promoted to purchasing agent and has been succeeded by **James A. Byars.**

Charlton H. Williams has been promoted to superintendent of Swift Mfg. Co., Columbus, Ga., succeeding **H. H. Hughes,** who resigned to establish his own business. **Allen Bentley,** formerly head of carding and spinning, is now assistant superintendent.

Frank Nabors is now warping and winding superintendent of Beaumont Mfg. Co., Spartanburg, S. C.

Harold Todd has been promoted to assistant superintendent of weaving at Calhoun Mills, Calhoun, Ga.

E. A. Craddock, formerly night carding superintendent at Bama Cotton Mills, Enterprise, Ala., has become second-shift foreman at Eagle & Phenix Mills, Columbus, Ga.

Joe S. Gammom has become spinning superintendent of Summerville Mfg. Co., Summerville, Ga.

T. P. James, formerly spinning superintendent of Lonsdale Mills, Seneca, S. C., has accepted a similar position at Exposition Cotton Mills, Atlanta, Ga., and **J. B. Walker,** formerly with Eastman Cotton Mills, Eastman, Ga., has become weaving superintendent of Exposition mills.

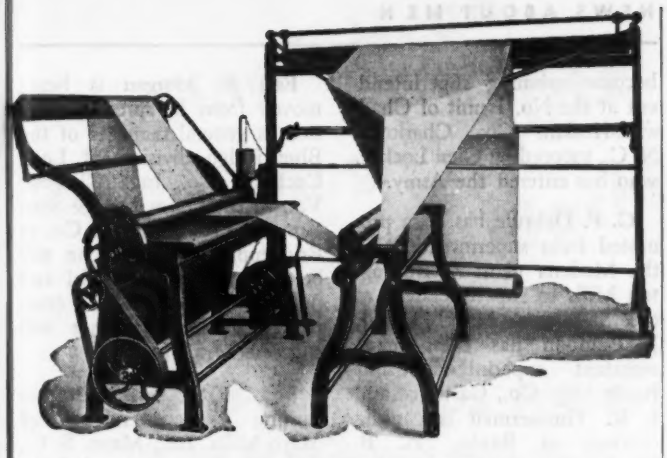
G. D. Whitesides, formerly spinning superintendent of Ragan Spinning Co., Ragan, N. C., has accepted similar position at Carolinian Mills, Inc., High Shoals, N. C.

A. G. Creasman has become mechanical superintendent of Trenton Cotton Mills, Gastonia, N. C., succeeding the late Don Laws.

J. J. Hinds has become superintendent of Habersham Mills, Habersham, Ga.

George H. McGinn, formerly designer for the Warren unit of Graniteville Co., Warrenville, S. C., has become carding superintendent there.

J. E. Fagan, formerly with Riverside & Dan River Cotton Mills, Inc., Danville, Va., has



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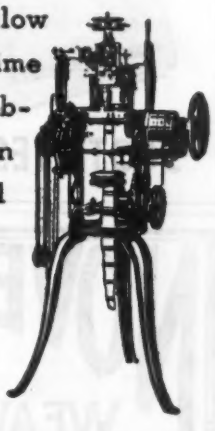

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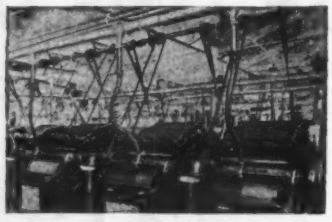

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NOVELTY-YARNS For WEAVERS-KNITTERS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

NEWS ABOUT MEN

become spinning superintendent at the No. 1 unit of Chadwick-Hoskins Co., Charlotte, N. C., succeeding **Glen Lockey**, who has entered the Army.

G. P. Debrule has been promoted from superintendent of the Modena plant of Burlington Mills to superintendent at the St. Pauls' N. C., plant. **J. Brannon** has been made assisstant superintendent at Ranlo Mfg. Co., Gastonia, and **J. R. Timmerman** is carding overseer at Ranlo. **E. B. Crosby** has been promoted from third to first shift overseer at the Modena mill.

T. J. Willis recently became superintendent of Mathews Cotton Mills, Greenwood, S. C., and **C. A. Barrett**, has become assistant superintendent.

J. T. Thompson, former carding superintendent at the No. 1 unit of Chadwick-Hoskins Co., Charlotte, N. C., has retired and has been succeeded by **Forest Campbell**, formerly with Drayton Mills, Spartanburg, S. C.

A. L. Goodman has become day carding superintendent at Gastonia Combed Yarn Corp., Clara unit, Gastonia, N. C., succeeding **B. E. Brady**, who has resigned. **Roy Hooker** has been promoted from second hand to head of night carding.

Allen Gray, former mechanical superintendent at Linwood Cotton Mills, LaFayette, Ga., has accepted a similar position with Consolidated Textile Corp., Ella Division, Shelby, N. C., succeeding **G. C. Morehead**, who has resigned.

W. I. Mattox, formerly superintendent of Jennings Cotton Mills, Inc., Lumberton, N. C., has become general superintendent of carding and spinning at the same mills.

Ernest Shumate, superintendent of Fickett Cotton Mills, Inc., Whitehall, Ga., has resigned.

A. W. Rogers is now overseer of carding at Robinson Mfg. Co., Oxford, Me.

S. L. Bolton has resigned as superintendent of Collins & Aikman Corp., Norwood, N. C., and has accepted a similar position with Crest-Tex Mills, Inc., Russellville, Ala.

E. F. Wyatt has become superintendent of Brodnax Cotton Mills, Brodnax, Va.

Earl B. Morgan is being moved from his present position as general manager of the Blue Ridge division of Lees-Cochrane Co., Inc., Glasgow, Va., to the James Lees & Sons Co. and Lees-Cochrane Co. at Bridgeport, Pa. where he will be in charge of industrial and public relations for both companies. **Wert Faulkner** will succeed Mr. Morgan.

J. L. Kirby has retired as carding superintendent of Mayo Mills, Inc., Mayo, S. C., and has been succeeded by **Fred Jackson.**

J. W. Hames, Jr., has been made overseer of spinning at Lanett, Ala., mill of West Point Mfg. Co.

Hines S. Richardson has been promoted to superintendent of weaving with S. Slater & Sons, Inc., Slater, S. C.

E. A. Powell has been promoted to superintendent of Goodyear Clearwater Mills, Rockmart, Ga., succeeding **L. S. Hall**, who has retired.

S. J. Adams has resigned as superintendent of Carter Fabrics Corp., South Boston, Va., a position he has held since the plant was opened. He has been succeeded by **Henry Littlejohn**, for the last two years superintendent of S. Slater & Sons, Inc., Slater, S. C.

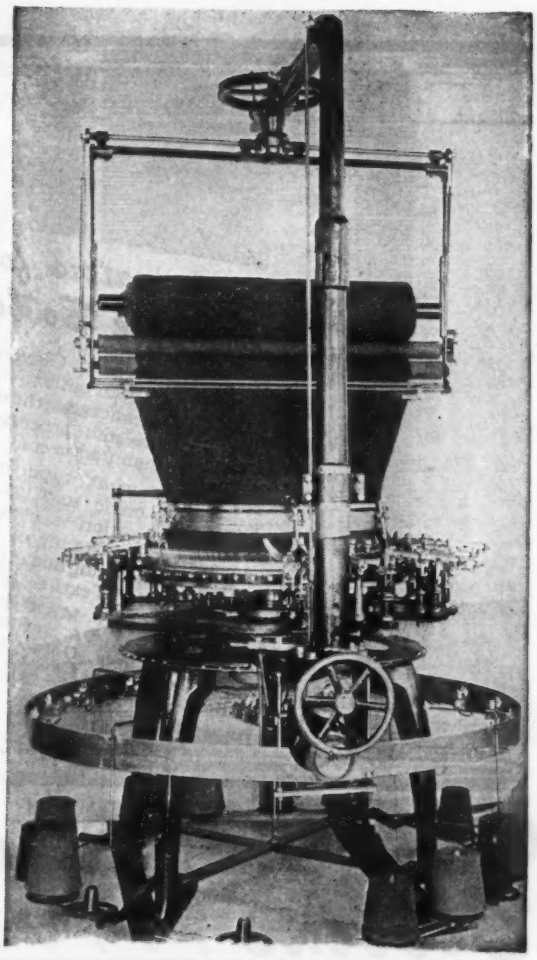
A. D. Treadwell is now master mechanic at Callaway Mills, Milstead, Ga., succeeding **J. S. Burnley.**

A. M. Bates has resigned as cloth room superintendent, Bibb Mfg. Co., Columbus, Ga., and has accepted a similar position with Kilby Cotton Mills, Montgomery, Ala.

J. W. Patterson has been made assistant superintendent of Tallassee Mills, unit of Mt. Vernon-Woodberry Mills, Tallassee, Ala. He was formerly general overseer of carding and spinning at the No. 1 unit **Lanier Roton** has succeeded him in this position.

F. G. Feaster has become manager and superintendent of South Carolina Cotton Mills, Inc., Orangeburg, S. C., formerly the Santee Mills. **H. E. Dill**, former head of the overhauling weaving department of Joanna Textile Mills Co., Goldville, S. C., is now weaving overseer and **L. T. Bowers** is carding overseer.

Single Head Spring NEEDLE Knitting Machine



PRODUCES 100 YARDS PER 8 Hr. DAY

The New S-1 Single Head Spring Needle Machine is especially designed for overcoating materials. At the same time, *any* fabric can be knit on it that is knit on the older type spring needle table!

Production is approximately 100 yards per 8 hour day, using 6 feeds.

Features: Electrical driven by V belt simplified motor drive . . . electrical yarnstop motion . . . and needle stop motion.

Install one of these machines today, and in a few hours after reaching the mill it will be ready for operation!

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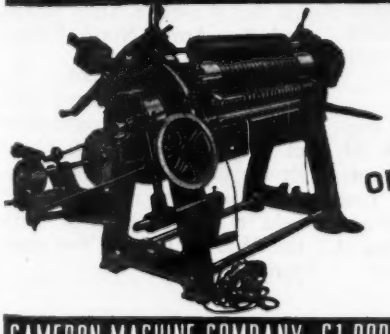

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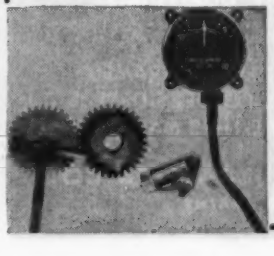
NEW BRUNSWICK NEW JERSEY

INDISPENSABLE FOR CONTROLLING AND INCREASING PRODUCTION

Every textile plant can benefit through the use of Jones Tachometers. Used for checking RPM; provides instantaneous and continuous check on operating speeds of rollers, shafts and other rotating parts; indicates shaft RPM, feet per minute, total output and other essential production information. Allows machines to run at peak productive rate safely. Speeds changeovers to different types of production.

Jones Portable Hand Tachometers are continuous indicating, centrifugal movement, with guaranteed calibration. Light-weight, heavy-duty. Multi-range tachometer complete with 4" extension rod, convex and concave rubber tips, 12" circ. peripheral disc, centerpunch and carrying case . . . $60 FOB Stamford, Conn. Single range, portables available in wide variety of ranges. Write for specifications.

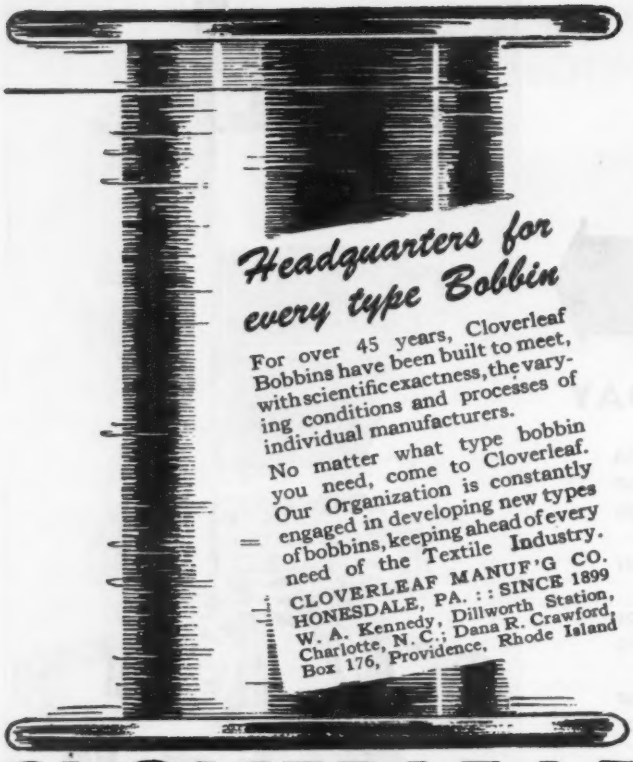


JONES FIXED TEXTILE TACHOMETERS

Jones Fixed Textile Tachometers for permanent installations are continuous indicating over full-scale uniform 360° dial. Heavy duty, wide variety of ranges, and special dial indications. Specifications and prices upon request.

JONES MOTROLA

437 Fairfield Ave., Stamford, Conn.


Headquarters for every type Bobbin
For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.
CLOVERLEAF MANUF'G CO.
HONESDALE, PA. : : SINCE 1899
W. A. Kennedy, Dillworth Station, Charlotte, N. C.; Dana R. Crawford, Box 176, Providence, Rhode Island

CLOVERLEAF

Bobbins . . . . . .

New type cone drive spindle and bobbin available at end of war.

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS SPECIAL REPORTS

GREENVILLE, S.C. FALL RIVER, MASS.

CHAPMAN
STATIC
NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 368, PORTLAND, MAINE

Men in Armed Services

Thurmond Chatham, commander in the navy and chairman of the board of directors of Chatham Mfg. Co., Elkin, N. C., has been awarded the Bronze Star for meritorious achievement aboard the U. S. S. Phoenix from Dec. 26, 1943, to May 18, 1944. He is now stationed in Washington.

Lt. Col. William A. Peterson has been named Director of Supply at the Philadelphia Quartermaster Depot, replacing **Col. H. M. Manderbach.** Colonel Peterson has been succeeded as executive officer of the Procurement Division by **Lt. Col. R. J. Dillon,** officer in charge of the Buying and Production Branch of the Procurement Division. **Capt. James H. Kennedy, Jr.,** has been appointed officer in charge of the Government Furnished Materials Branch of the Procurement Division, succeeding **Maj. P. D. Forgione.**

J. W. Timberlake, Jr., Gastonia, N. C., who recently returned from the European theater of war, has received his honorable discharge as a major in the Army and has accepted a position with American Yarn & Processing Co., Mount Holly, N. C.

C. B. Short, formerly spinning superintendent at A. M. Smyre Mfg. Co., Gastonia, N. C., but for the last nine months in the armed services, has returned to his position at the mill.

F. G. Grayson, formerly supply clerk at Consolidated Textile Corp., Ella Division, Shelby, N. C., on leave with the U. S. Army for some time, has been honorably discharged and has returned to the mill as paymaster.

Brendan V. Sullivan, former manager of the Providence office of Philipp Bros. Inc., has been released from active duty as a major in the Army and has returned to his home at Cranston, R. I. He was director of supply of the Army Service Forces Training Center, Camp Lee, Va.

Stanley B. Dwork, former textile broker with Godfrey Bloch, New York, is currently stationed at Camp Gruber as chief of the salvage, purchasing, and contracting branches. He is a lieutenant.

Myron M. Herbert has been promoted to major in Quartermaster Corps. He is in the Procurement Division of the Office of the Quartermaster General, Washington, D. C., and has charge of procurement of government issue clothing for the Women's Army Corps and the Army Nurse Corps.

B. H. Baker, recently discharged from the Army, has become carding superintendent of the Hickman plant, Graniteville Co., Graniteville, S. C. Before entering the Army he held a similar position with the Warren unit of the company.

Obituary

Walter H. Bradley, 64, of Boston, Mass., formerly active in many textile enterprises but lately special assistant to the Ambassador at Rio de Janeiro as economic advisor, died June 18. During his association with the textile industry he was superintendent of Androscoggin Mills, Augusta, Me.; president of four mills in the Carolinas; assistant treasurer of Pepperell Mfg. Co., treasurer of Hill Mfg. Co., Lewiston, Me., and finally, treasurer of Fisher Mfg. Co., Fisherville, Mass.

Walter Wood, 77, who, while a resident of Phenix, R. I., operated the Woco Braid Co. at Black Rock for a number of years, died recently.

John H. Connington, who for more than 50 years operated a cotton yarn firm in Philadelphia, Pa., died July 17.

Herbert J. Winn, 75, chairman of the board of Taylor Instrument Co., died at his home, Rochester, N. Y., June 27. Mr. Winn began working with the company in 1893.

Israel M. Schulder, vice president of Consolidated Sewing

Your Standard Specification for Silicates

STANDARD

INSURES SATISFACTION

ALKALI

DIAMOND ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N.Y. · MARSEILLES
DALLAS, TEXAS

ONE MINUTE TALKS ON

Removing Sizing From Plastic Spools

When sizing compound hardens on plastic spools or cylinders used for nylon throwing, a quick, easy way to remove it is to immerse spools in a recommended solution of Oakite Compound No. 84. Sizing that ordinary cleaning materials won't touch, loosens and washes away when vigorous-acting Oakite Compound No. 84 gets to work. Spools emerge from rinsing completely clean . . . in excellent condition for re-use!

If you have questions about this or any other equipment cleaning task, write us direct. We will be glad to give your query prompt attention!

OAKITE PRODUCTS, INC.
42 Thames Street, New York 6, N. Y.
Technical Service Representatives Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* CLEANING
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

RAPIDASE

for de-sizing cottons, rayons and mixed goods

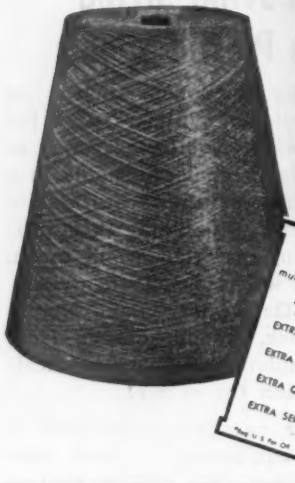
Assures rapid, dependable de-sizing
Our technical staff always at your service.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE • NEW YORK

D. R. KENYON & SON
RARITAN, N. J.

MACHINERY
TENTERING
and DRYING

AMERICAN



. . . more economical to use because . . . .

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

CHATTANOOGA, TENN.
Mr. Tom Moore
736 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

J. E. SIRRINE & CO.
GREENVILLE • SOUTH CAROLINA

Engineers

TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
BLEACHERIES • STEAM UTILIZATION • STEAM POWER PLANTS
WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

Machine & Supply Co., New York, died recently.

Otis L. Humphrey, 80, for many years a consulting textile engineer at Boston, Mass., died at Lowell, Mass., July 1. In 1885 he became connected with the Lowell Machine Shop, later the Saco-Lowell Shops, as a textile engineer. In 1899 he was appointed head of the cotton yarn department of Lowell Textile Institute, and while there conducted important research in the then newly patented process of mercerizing.

Lawrence R. Richmond, vice-president and treasurer of Crompton Co. and Crompton-Richmond Co., Providence, R. I., died recently. He had been associated with the Crompton's interests since 1909.

William Henry Ayers, 68, president of Ayers, Ltd., Montreal, Que., died recently.

Max Strasmich, 53, in the textile business for 27 years, died June 30, in Providence, R. I. He was the owner of the Ross-Matthews Co., Pawtucket, R. I., and was president and treasurer of Heywood Narrow Fabric Co., Fall River, Mass.

Israel Cohen, died recently in Philadelphia, Pa. He was owner and operator of Modern Cloth Sponging Co.

Robert Gilroy Spratt, 61, vice president and chairman of the board of Textile Mill Supply Co., Charlotte, N. C., died June 30. He also was president of the Charlotte Mfg. Co.

Albert B. Clark, 53, president of Charlotte Supply Co., Charlotte, N. C., before his retirement in 1942, died recently.

Arthur C. Coggeshall, 63, died recently in New Bedford, Mass. He was engaged in the textile supply business since 1917 and at one time was a member of the office staff of King Philip Mill, Fall River, Mass.

Henry L. Jespersen, Jr., of Fanwood, N. J., died recently. He spent all his business life in the woolen industry, being associated with Coronet Worsted Co., American Woolen Co., Botany Worsted Mills, and Montrose Worsted Mills.

Fred E. Busby, 70, former head of the chemistry, dyeing, and finishing departments of the New Bedford Textile School, New Bedford, Mass., for 22 years, died recently. A graduate of Massachusetts Institute of Technology, he taught chemistry there and later was superintendent of Arnold Print Works, North Adams, Mass.

Henri Nicolas F. Schaeffer, chief chemist of Apponaug Co., Warwick, R. I., died recently in Providence, R. I. A native of France, he had been with Apponaug for 29 years.

Charles A. Stein, 53, Chicago representative for the Catlin Yarn Co., for 36 years, died recently.

Frederick C. Renner, 44, general sales manager of the organic chemical division of Monsanto Chemical Co., St. Louis, Mo., died recently.

Arthur T. Cutler, house salesman for Bates Fabrics, Inc., New York, died recently. He was formerly employed by Bliss Fabyan & Co.

Vardry McBee Johnson, 80, for many years superintendent of Poinsett Mill, Greenville, S. C., before his retirement, died July 13, at his home in Laurens, S. C. He had also been superintendent of Aragon Mills, Aragon, Ga.

Frank E. Kilby, former superintendent of print works of Ware Shoals Mfg. Co., Ware Shoals, S. C., died June 28.

Joseph Ramsden, 69, retired overseer of Crown Worsted Co., Providence, R. I., died June 24, in Providence. He had also been with the Pocasset Worsted Co., Thornton, R. I., for many years.

Leroy L. Chandler, 64, for many years spinning superintendent at Borden Mills, Inc., Kingsport, Tenn., died recently.

Thomas Tsakeris, 56, died in Reading, Pa., July 14. He had been in charge of maintenance for many years at Berkshire Knitting Mills.

Thomas Franklin Harville, 41, for 25 years foreman at Oakdale Cotton Mills, Jamestown, N. C., died July 16 in Thomasville, N. C.

Mrs. Sarah Cole Curtis, 47, chairman of the board of directors of Columbia Mfg. Co., Ramseur, N. C., died July 21, in Greensboro, N. C.

Where Decay, Odor, Taste, or Acid Is A Problem, Use

Tidewater
RED CYPRESS

Read What Authorities Say About Its Superior Qualities

Romeyn Beck Hough, author of "American Woods", says of Cypress "Its great durability, immunity from the attacks of parasites, and non-liability to great shrinking or warping make it one of our most valuable woods for all woodwork exposed to weather, for tank construction, cooperage, etc. Its value . . . is enhanced by its comparative freedom from coloring or flavoring ingredients".

Phillips A. Hayward, author of the volume on Wood in Chandler Cyclopedia, says that Cypress is "easy to work, available in large dimensions, and resistant to decay". It is also "resistant to changes in moisture, resistant to acids, and imparts neither color nor taste."

For a hundred industrial needs, TIDEWATER Red Cypress is the right answer. Write today for full details.

Tidewater Red Cypress "The Wood Eternal"
RED CYPRESS

Can be Furnished Promptly from St. Louis Stock

FLEISHEL LUMBER CO.
4233 DUNCAN AVE. • ST. LOUIS 10, MO. • NEwstead 2100

STYLE28
ROVING TRUCK

LANE CANVAS TRUCKS

For the well equipped mill

W. T. LANE & BROS., Inc.
Manufacturers, Poughkeepsie, N. Y.

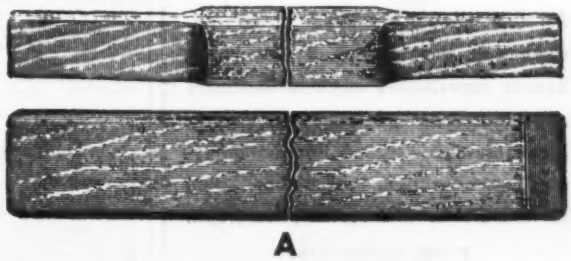
WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS



A DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirements. Write

FRANK BAILEY Cedar Brook, N. J.

ALL STEEL ECONOMY BALING PRESSES

ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.

ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.

REPRESENTATIVES:
New York Office: 100 Gold St.
Philadelphia Office: Drexel Bldg.
Terrell Machine Co., 1200 No. Church St., Charlotte, N. C.
Boston Office: 601 Atlantic Ave.
Other Sales and Service Branches in most Important Cities.

WANTED

A man to handle product and fabric development in the elastic goods industry.

Good opportunity for the man who wants position with a responsible and well established concern. Write fully, stating experience, age, marital status, education, salary requirements, etc. to Charles P. Raymond Service, 294 Washington Street, Boston, Mass. Over 45 years of Confidential Employment Service for employers seeking men and men seeking positions.

Hosiery Machine Fixer

WANTED

Full Fashioned hosiery machine fixer. Must know German and Reading machines. Good pay. Work in attractive Southern town for a well-established firm. In your reply please state age, draft status and experience in full.

P-340, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

A New Jersey Manufacturer of Machinery for the paper and textile trade desires experienced machine designers and draftsmen for post war work. Please furnish detailed information regarding education, experience, age, marital status, and recent photograph.

P-335, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-333, Textile World
330 West 42nd St., New York 18, N. Y.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT : BUSINESS : "OPPORTUNITIES" : EQUIPMENT : USED OR RESALE

UNDISPLAYED —— RATES —— DISPLAYED

10 CENTS A WORD. MINIMUM CHARGE $2.00
Positions Wanted (full or part time individual salaried employment only) ½ the above rates payable in advance.
Box Numbers—Care of publication New York, Chicago or San Francisco offices count as 10 words.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Individual Spaces with border rules for prominent display and advertisements.
The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

POSITIONS VACANT

USE RESEARCH Laboratory of well-known manufacturer of organic chemicals in the mid-west has an immediate and permanent position open for a man, preferably under 35 years of age, with several years experience in the textile industry, who is familiar with the problems incident to the use of chemical specialties, such as textile oils, detergents, wetting agents, etc. With limited supervision he should be capable of conducting applied research laboratory projects, correlating data and writing well-organized reports in good English. Salary will be commensurate with qualifications. Position holds most promise for a man who is qualified by reason of personality, as well as technical background, to also do some technical service with manufacturers of chemical specialties for the textile industry. P-319, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED: KNITTED outerwear or underwear finisher. Experienced washing, scouring and fulling knitted fabrics or garments. Excellent opportunity. P-341, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: COLOR matcher on chromes and indigosol print colors. Adequate salary. Will move to Central Pennsylvania plant location. P-342, Textile World, 330 W. 42nd St., New York 18, N. Y.

MEDIUM SIZE, long established firm, manufacturing textile machinery and textile chemicals in the New York area wants for its Southern Branches in N.C., S.C. and Ga. A man between 30 and 40 years of age, mechanically inclined, with experience and connection with textile industry for special work in office and field. Place of residence to be in center of Southern Textile Industry. Position permanent and opportunity for advancement for right man. P-343, Textile World, 330 W. 42nd St., New York 18, N. Y.

MASTER MECHANIC, Textile dyeing, printing and finishing, preferred, steam and power in New England, to take charge maintenance crew of 60 men, qualified by experience. Exceptional opportunity for a man of real initiative and ability. Give complete personal history and qualifications in first letter. Will be kept in strict confidence and returned on request. P-344, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: EXPERIENCED worsted carder and comber small plant, good position. State full particulars. Strictly confidential. P-345, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED: BOSS carder experienced on woolen or cotton waste cards, ring doffers and tapes. New England location. State experience, salary expected, WMC availability and references in your letter. P-346, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED: EXPERIENCED machine fixer or mechanic with thorough knowledge of full fashioned machines for reliable Southern mill. Splendid opportunity for one seeking post-war future. In reply state the least salary acceptable to start, number of years experience and on what type machines. P-347, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Additional Position Vacant ads on page 236)

TEXTILE EXECUTIVE AVAILABLE

Highly capable cotton and spun rayon manufacturer. Fully familiar with modern management methods, quality, cost and production controls. American, 39, Technical Education, successful record.

Now employed, good reason for change.

Agent, Manager or Superintendent
Minimum salary $7,500.00

PW-337, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE-TECHNICIAN: technician, thoroughly experienced in styling and fabric development of filament, spun and blended yarns, cost calculations, analysis, testing, microscopy, practical mill experience, desires to connect with a progressive textile organization. Now employed. PW-348, Textile World, 330 W. 42nd St., New York 18, N. Y.

HIGHLY EXPERIENCED rayon throwster, at present employed. Desires connection with reputable company. PW-349, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED BOSS knitter or overseer job on Scott-Williams or Wildman latch needles. 25 years experience. PW-350, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

REPRESENTATIVES AVAILABLE

AGENCIES for Australia required for Manchester goods, cleaning cloth, cotton waste and general merchandise. Reply David Hyman, Merchant, 12 Henry Street, Kew, E4, Melbourne, Australia. (Bankers — English, Scottish & Australian Bank Ltd., Kew, Melbourne, Australia.)

FIRST-CLASS Swedish agency firm desires to represent well organized USA mills producing tops, worsted yarns, cotton yarns, woven and printed cotton goods. Best references. Reply to RA-304, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED

LACE DRAFTSMAN

Experienced, by well established firm in New York State. Apply in writing, stating details of experience.

P-297, Textile World
330 W. 42nd St., New York 18, N. Y.

LOOM FIXER

Experienced Jackard & Tap fixer, on 27" carpet looms.
Write stating full experience.

P-311, Textile World
330 West 42nd St., New York 18, N. Y.

Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 **294 WASHINGTON STREET. BOSTON 8, MASS.**

(Additional Employment & Business Opportunity Advertising on page 236)

Aggressive, well-intrenched National Sales Organization

SEEKS

New Manufacturing Source of Venetian Blind Tape

Our client now distributes a broad line of supplies to Venetian Blind manufacturers. They cover the industry exhaustively, through a chain of strategically-located sales offices and warehouses, and enjoy top-grade standing in the field.

Anticipating large-scale expansion, they seek a new volume source of Venetian Blind Tape (Ladder Web).

If you have equipment which lends itself to early conversion to this type of product, this is a rare opportunity to link up on a long-term basis, with a complete nation-wide, smoothly-functioning, alert sales and distributing structure.

Potential dollar volume ranges toward seven figures annually. Substantial financial commitment or capital investment is readily available if there is sound reason for it.

Your preliminary written inquiry will receive strict confidence and a prompt reply.

Please address:

DORSEY & ADAMS

44 Wall Street **New York 5, N. Y.**

SEARCHLIGHT SECTION

WANTED

Master Mechanic

One of the most successful well-established textile mills in New York State has asked us to supply them with an A-1 Master Mechanic. They ask for a man with technical or textile school education, experienced in textile machinery, electricity, sprinklers, plumbing and general mechanical work. Here is an opportunity for the right man to engage with a strong company. Address in confidence—

Charles P. Raymond Service, Inc.
294 Washington St., Boston, Mass.

Over 45 years Confidential Employment Service for employers seeking men and men seeking positions.

WANTED

CHEMIST

Preferably with experience in textiles, for research laboratory of fungicide manufacturer for the textile industry. New York metropolitan area.

P-285, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

TIME STUDY MAN

Experienced on textiles. Good future prospects with established firm in N. H. Give full details Re: Age, Education, Experience and expected Salary.

Apply P-318, Textile World
330 West 42nd St., New York 18, N. Y.

FACTORY REPRESENTATIVES WANTED

Established manufacturer of drying equipment (gas & electric) suitable to varied industries, such as Textile Mills, Metal-finishing plants, etc., Desires active representatives in all states. Good commission—ready market. Write fully, stating territory now actively covered, number of men in organization, accounts represented, etc., Address

RW-351, Textile World
330 West 42nd St., New York 18, N. Y.

ALLUS

Representatives

HUERFANOS 930 of. 54—CASILLA 9748

SANTIAGO DE CHILE

intimately connected with the CHILEAN TEXTILE INDUSTRY offer their services to the AMERICAN TEXTILE MACHINERY Manufacturers and YARN SPINNING MILLS

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorney

Booklet—"General Information Concerning Inventions & Patents" and "Fee Schedules sent without obligation.

Patents—Copyrights—Trade-Marks

Suite 452, 815—15th St., N.W., Washington 5, D.C.

SWEDEN

Well known textile agent wants the representation on commission basis of American Textile Mills.

Reply to

FRED. WESSING
Regeringsgatan 56 Stockholm, Sweden

References: American Legation, Stockholm.

DUTCH COMMERCIAL UNDERTAKING, being well established, with first rate staff and large storeroom is on the lookout for good agencies of first American Factories making:
Shirts, Ties, Men's Underwear, Socks, Braces, Garters, Woolen, Linen, and Cotton Fabrics for Clothing, Handkerchiefs, Bathing Costumes, etc!
We are willing to operate on the commission basis or for own account. References are available.
RA-336, Textile World
330 West 42nd St., New York 18, N. Y.

WOOLEN MILL

An established going concern processing 8 to 15 cut blended yarns and manufacturing 82" civilian cloth on full automatic looms. Excellent native labor conditions—competent superintendent.

Land—Buildings—Machinery—Supplies (excluding goods in process and inventory) A going business, will be sold free and clear of all debts and obligations for $300,000.00. Some terms.

WHITE AND COMPANY
PALMER BUILDING, ATLANTA, GEORGIA

MILL WANTED

Mill to do Commission Weaving of Cotton Upholstery Fabric having large post-war market. Will start as soon as civilian yarn is available.

BO-316, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

BRAIDING MILL

WILL PURCHASE OUTRIGHT. COMPLETE BRAIDING MILL. Prefer 17 and 29 Carriers (Textile Machine).

P.O. Box 1433, Springfield, Mass.

OPPORTUNITY

Good opportunity for small manufacturer of specialty items; blankets, sleeping bags, etc., in western wool producing region. Have good factory building available. Good local market could be developed.

Write for information to:

Committee for Economic Development
Chamber of Commerce
Casper, Wyoming

South American Mill Owners

We will select the machinery you require. We will also inspect machinery you contemplate purchasing. Our knowledge has been acquired by practical mill experience. "You can depend on us."

LAWRENCE H. KELLY
Textile Machinery Consultants
P. O. Box 2442, Paterson, N. J., U. S. A.

COTTON MILL

A Southeastern spinning mill with over 20,000 spindles now producing more than 2,000,000 pounds 24's to 50's yarn per year. A going concern.
Land - Buildings - Village - Modernized machinery - Goods in Process and Supplies will be sold for $950,000.00. Terms.

WHITE AND COMPANY
PALMER BUILDING ATLANTA, GEORGIA

WANTED

Surplus

Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

W-270, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

4 x 1 automatic looms about 72" wide Doupe heddles.
Please give us size and gauge you have available.

International Looms of N. J. Inc.
829 Newark Avenue Elizabeth, N. J.

WANTED
16 to 20 gauge

COTTONS PATENT MACHINES

In good condition. Write full particulars in first letter.

W-339, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

1—Fulling Mill-Hunter 26 B.
2—Shearing Machines—Parks & Woolson Model A.
1—Semi-Decating Machine, 24" or 36" cylinder.
3—Sewing Machines—Dinsmore Houston Type, foot pedal portable.
1—Napping Machine—36 rolls—Double action—Woonsocket or Gessner-gear driven cylinder.
Please give full description and price
Write
W-352, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

6 Spinning Frames and 2 Drawing Frames, Worsted.

W-338, Textile World
330 West 42nd St., New York 18, N. Y.

Wanted

60" Metallic Breast For 60" Card

Write Box 115,

LONE STAR WOOLEN MILLS
SAN MARCOS, TEXAS

UNIVERSAL TOOLS: Dandy 10 piece set: Ridgid Pipe Wrench, Channellock Pliers, Adjustable Wrench, CEETEE Pliers, Diagonal Cutter, Ball-pein Hammer, Plastic Screwdriver, Waterpump Pliers, Hacksaw & Blade, Cold Chisel.....$19.85
IMMEDIATE SHIPMENT: Overnight by Air to Anywhere USA. Price List and Order Blank Free:
REMEMBER: We have it—Can get it—or it isn't made. Remit Order Today.
UNIVERSAL TOOL COMPANY, O. B. Demattels, President, 1527 Grand TW, Kansas City, Mo.

- Printing Machines
- Dry Cans
- Calenders
- Quetches
- Extractors
- Tentering Frames
- Beamers & Tubers
- Doubling & Felding

Looms—Warpers—Winders—#90 & #50 Universals
Ribbon Machinery & Equipment

A. & M. BLANK CO., INC.
49 STATE ST. PATERSON, N. J.
Sherwood 2-1367 Lambert 3-9523

2—20 spindle #90 Universal Filling Winders, $200.00 each.
2—sets Ring Doffers 16" x 60", each with 30 rings, $150.00 each.
All above in good order, subject being unsold, f.o.b. Mill, crating extra.

FS-290, Textile World
330 West 42nd St., New York 18, N. Y.

The first "Textile Mill" *began in the home...*

THE textile mill as we know it today had its first rudimentary beginning in the medieval household. Wool came from sheep on the estate. Labor was divided among servants. Here, in a print from a 14th century manuscript, we see women preparing wool... carding, combing, spinning and weaving. Such processes provided clothing for the whole household, saving the expense of buying from merchants when money was scarce.

Illustration from the Bettman Archive

MLC SERVING THE TEXTILE INDUSTRY

1—60" C & M Brusher
1—66" C & M Brusher and Sander
3—46" x 52" Button Breakers
3—42" Butterworth 3-Roll Friction and Rolling Calender, 1—motor driven, 2-belt dr.
1—60" D. & F. 2 cyl. Iron Shoddy Card
1—Sargent Yarn Conditioning Machine
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—46" Windle Doubler
1—4 delv. H & B dr. frame
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300-lb. machine, extractor
1—26" Tolhurst Extractor
1—30" American Laundry belt driven extractor
1—40" Tolhurst extractor, belt-driven
1—60" Broadbent Copper Basket Extractor
2—Hunter No. 10 Fulling Mills
10—40" C & M 42", 50", 100" Folding Machines
1—52" James Smith Card Grinder
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
12—76" cloth Draper modified D automatic looms, 81" reed space with Lacy tops for 6 harness work, motor driven

FOR SALE

6—92" C & K 4 x 4 Box Looms, motor driven
1—72" Kenyon 2-Bowl Crab
1—80" D. & F. 20 roll Double Acting Napper
1—114" 2 Roll Padder, Brass and Rubber Rolls. Screw End, Lever Set.
1—114" Simpson Batcher
1—144 spindle Platt 2½" ring twister, motor driven.
1—96 spindle D. & F. 3½" ring twister.
9—100 spindle Saco-Lowell 3½" ring trap twisters.
1—48" S. & F. single cylinder Garnett.
1—72" P. & W. semi decator.

18—92" C & K 4 x 4-25 Harness Belt driven woolen looms
4—240 sp. D & F 2" gauge Mules
24—72" Stafford 2 x 1 automatic Looms 77" reed space, 25 harness head motions, motor driven

1—24" Parkhurst Burr Picker
1—40" Parkhurst Burr Picker
3—65½" Voelker double bed rotary cloth presses belt driven 16" cyl.
1—66" Gessner double bed rotary cloth press belt driven 12" diameter roll
1—84" Voelker Cloth Press, motor driven
2—50" Dinsmore Inspecting, Sewing & Rolling Machines, Mtr. Dr.
1—60" C & M Plush Shear
2—66" C & M 2-Blade Shears
2—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Monforts 2-Blade Shear
1—Shultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C & M 5 Burner Gas Singer
12—256 Sp. Whitin 2" Ring Spinners
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
6—120 Spindle Draper Spoolers
1—60" C & M Tiger. Arranged for Mtr. Dr.
2—100 Spindle Foster tube winders, belt driven
1—200-spindle Draper 2¼" Ring Tape Drive Twister
5—D & F Warpers with Beamers, etc., 82" to 100"
2—54" Entwistle Warpers

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. MLC 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

You plan Production . . .

PLAN FOR NEEDED EQUIPMENT FROM

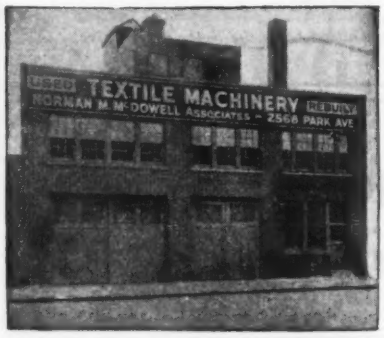
McDOWELL ASSOCIATES

and you'll get BOTH the Production and the right Equipment

USED OR RECONDITIONED — DEPENDABLE!

PARTIAL LIST

7—BRUSHING Machines 1 to 6 roll Vertical or Horizontal Units.
1—CALENDER 42" Friction 3 roll.
1—CALENDER 50" Pressure 3 roll.
1—SEMI-DECATUR 68".
1—DOUBLER 60".
1—DRYER Net type 5 tier unit, fans with Infra-Ray Burners.
2—DRYERS RAW STOCK approx. 350-lb capacity.
2—DRY HEADS TUBULAR KNIT GOODS 11 Aluminum Baskets.
1—DRYER Hunter 2 section Drum type for Knitgoods with Carbonizing Dryer.
1—DYEING Unit SKEINS 28 arms.
6—EXTRACTORS 36" to 60".
3—FULLING MILLS Double Compartments.
1—MANGLE 42" 3 roll.
1—MANGLE Heavy Duty 66" 2 roll.
3—NAPPERS 80" Cotton 20 roll Units.
4—NAPPERS 66" to 90" Woolen D.A. 24 roll units.
2—NAPPERS 80" D.A. 36 roll units.
2—NAPPERS C&M 66½" Single Roll units.
1—PADDER 66" 2 roll top brass, bottom rubber.
3—PRESSES, Rotary 66" to 80" Double Beds.
2—QUETSCHES 60" & 80" width 2 roll units.
4—SHEARS 40" to 80" width Single & Double Blade Units.
1—SET SQUEEZE ROLLS 80" x 7" diameters.
1—STEAMING Machine 68" x 21" Dia. with blanket.
2—MEASURING MACHINES AWC 66" & 80" widths.
1—TUBER 62" motor and clock.
1—TENTER FRAME 60' x 80" width.
1—TENTER FRAME 30' x 58" width.
1—TENTER FRAME 10' x 40" width.
1—SCOURING Unit 5 Bowl 48" Raw Stock.
4—WASHERS Wool 6' boxes.
1—VACUUM EXTRACTOR 72" pump and motor.
1—BACKWASHER 2 bowl, revolving creel.



near 138th Street

CARDING, SPINNING & WEAVING:

5—Sets D&F 3 cylinder Woolen Cards 48x48 complete, 60 good ends.
2—Sets Furbush 2 cylinder Shoddy Cards 48x60, with combs.
4—Sets James Smith 2 cylinder Shoddy Cards 60x48, with combs.
2—Sets Furbush 3 cylinder Shoddy Cards 48x48, with combs.
4—COMBS Worsted with circles.
2—CONDENSERS TAPE 60" Cards 108 ends each.
4—Bramwell FEEDS for 40" & 60" Cards.
3—Apperly FEEDS for 48" & 60" Cards.
1—GARNETT 3 cylinder 30x60 complete with automatic feed.
1—GARNETT 2 cylinder 20x60 complete with automatic feed.
4—GILL BOXES Single Head Double Delivery.
2—Intermediates 9x4½ 84 spindles each.
75—LOOMS Draper E 30".
12—LOOMS Draper E 52".
45—LOOMS Draper D 42".
50—LOOMS Draper E 40".
40—LOOMS C&K 4x1 automatic 41½".
150—LOOMS C&K 4x1 automatic 50".
30—LOOMS C&K 4x1 automatic 52".
24—LOOMS Stafford 2x1 box 72".
24—LOOMS C&K 4x1 automatic 79½".
70—LOOMS Draper 90".
22—LOOMS C&K 82" 4x4 25 harness.
20—LOOMS C&K 92" 4x4 25 harness.
22—LOOMS C&K 82" Convertible 4x2 Box, 30 harness.
10—LOOMS C&K 48" 4x4 25 harness.
20—LOOMS C&K 92" Automatic Cam 8 harness.
2—MULES Worsted 650 Spindles each, 1-7/10" Gauge.
3—MULES 2" Gauge 30 end spools 240 spindles each.
1—PICKER WASTE 22" x 30", with feeds.
2—PICKERS RAG 18" x 30", with feeds.
3—PICKERS One Process complete.
6—SLUBBERS 12x6 and 10x5.
6—SPEEDERS 8x4 and 7x3½.
2—SPINNING FRAMES WORSTED 3½" pitch 4" traverse.
8—SPINNING FRAMES Cotton 2" ring, 4½" Gauge 208 Spindles each.
30—SPINNING FRAMES Cotton 2" Ring, 3" Gauge 196 to 252 Spindles each.
5—SPOOLERS 35½" to 48" with bobbin stands.
5—TWISTERS Worsted 2¼" Ring 249 spindles each.
35—TWISTERS Rayon Double Deck 128 spindles each.
10—TWISTERS 216 Spindle units 3" Gauge.
18—TWISTERS 252 Spindle units 3¼" Gauge.
10—TWISTERS 180 Spindle units 4" Gauge.
5—WINDERS Foster 100 Spindle units for Cones.
2—WINDERS Oswald Lever 48 Spindle units wind skein to bottle.
6—WINDERS Universal #80 Supercone 14 spindles each.
4—WINDERS Lazenby K 30 spindle units for bobbins.

MISCELLANEOUS Spare Parts, Bristle Brushes, Rubber & Wood rolls, etc.

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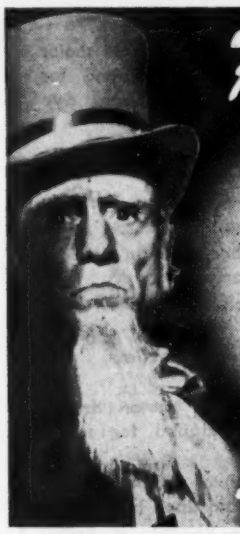
Tel.: MElrose 5-1772



Redeployment of Machinery

FOR THE JAP WAR NOW AND FOR POSTWAR JOBS LATER

The Jap War is still to be won! That means there must be NO idle machines. All equipment MUST be placed where it can be used most effectively NOW . . . also to make JOBS for returning veterans later. Let "CONSOLIDATED" redeploy your Idle Equipment.

Send your list to **"CONSOLIDATED"**

EXTRACTORS
6—V.V. & Tolhurst 54" & 60"; rubber & copper baskets.
8—V.V. Fletcher & Tolhurst 40-48", copper lined.
10—Tolhurst, American Laundry, Bock & Troy 14"-42", copper baskets.
2—48" Raw Stock Extractors.
1—Hercules 30" Open Top Extractor.
1—Gessner 72" Vacuum Extractor.

SCOURING & DYEING
3—Sargent & Lorimer 2&3 bowl scourers.
6—Klauder-Weldon Skein Dyeing Machines.
1—Obermaier Yarn Dyeing Machine.
2—Buhlman 100-arm skein dyeing machines.
1—Smith Drum Skein Dyeing Machine.
1—Geyser Type Skein Dyeing machine.
9—Franklin Cast Iron Pkge. Dyers—6-600#.
2—Haveg Totally enclosed dye becks.
1—Sargent Wool Dyer.
5—American Laundry & Zephyr 2 & 3 pocket rotary dyers.
1—12-string dyeing machine.

DRYERS
3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48" automatic feeder.
3—Sargent & Hunter Wool Carbonizers.
4—Truck Dryers, 1 & 2 trucks.
1—Multipass Airlay Dryer.
6—Proctor & Schwartz Yarn Dryers.
1—Pin Tenter Dryer, 64" wide.
1—V.V. 5-Tier Net Dryer.
2—Heathcote and Kenyon Cloth Dryers.
1—Proctor & Schwartz Hosiery Dryer.
1—Riggs & Lombard Cloth Dryer.
1—Sargent Wool Dryer. 1—P & S Apron Dryer.
1—National Loop Dryer, 96".
1—P & S Roller type Festoon Dryer.

NAPPERS
2—D & F single acting Nappers, 60 & 84".
3—Gessner & Woonsocket double acting Nappers, 60", 84" & 90".

TENTER FRAMES
1—Textile Fin. Mach., 90'x50" Tenter.
1—W & J 80'x50" Swing Tenter.
1—Heathcote Pin Tenter.
1—25' Tenter with Bakelite clips.

PALMER QUETCHES & TENTERS
2—V.V. Palmers, 60" & 72".
3—Morrison & V.V. 50", 60" & 72" Palmer Quetches.
1—Butterworth 80" Palmer.
2—V.V. & General Machine 60" Palmerettes.

PADDERS, MANGLES, QUETCHES
5—Textile & Butterworth 2-Roll Pad, 50", 62", 90".
1—Butterworth 2-Roll 80" Padder.
4—Butterworth 50" 2-Roll Starch Mangles.
1—James Hunter 50" Water Mangle.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72".

BUTTON BREAKERS
3—Morrison & V.V. Button Breakers, 50-72", brass rolls.

REAMERS—BATCHERS
4—Van Vlaanderen 50" & 60" Beamers.
9—Batchers, 48"-72".

FLAT FOLDERS & DOUBLERS
4—E & Hall Flat Folders, 42"-60" with motors.
3—P & W & Windle 46"-60" Doubling, Reeling & Measuring.
1—96" Doubling & Folding Machine.

COATING MACHINES
Plastic and rubber coaters, 50"-72".

SEWING MACHINES
5—Morrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

BRUSHING MACHINES
2—P & W Cloth Brushers, 72" & 100".

SLASHERS
3—Saco-Lowell Cotton Slashers.

DECATERS
1—P & W 72" Decater.

WASHERS
1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—3-Compartment Monel Rotary Washer.
1—60" Open Washer.

CALENDERS
2—V.V. Ball Bearing Calenders, 50" & 60".
6—V.V. Butterworth & Textile, 3, 6 & 7-Roll Hydraulic Calenders, 80".
3—Butterworth & Perkins 40", 54" & 80" 3-Bowl Schreiners.
1—Butterworth 3-Roll 54" Friction Calender.
2—54" and 65" Embossers.
1—Textile Fin. 3-Roll Narrow Friction Calender.

SHEARS
3—P & W 2-Blade Shears, 60" & 68½", complete with lint saving device and brushes.

DYE BECKS
12—Morrison & V.V. 6' to 9' Dye Becks, stainless steel and wood tubs.

DYE JIGS
2—Morrison 60" Dye Jigs.
4—Morrison Dye Jigs, 40", S.S.
1—Butterworth Scouring Jig.

DRY CANS
355—Dry Cans, 50" to 112" face, 23" to 84" dia.

Complete Silk Throwing Plant
Complete Jacquard Weaving Plant
Small Complete Woolen Mill

PRINT MACHINES & EQUIPMENT
2—BTA & BTS Motors, 25, 35 & 50 horsepower. Star gears, mandrels, copper pans & doctor blades.
1—Franklin 3-Color 45" Print Machine. Complete with Jack, and 8 Copper Rolls.

PRINTING MACHINES
7—R. B. & F. 1-10 color Print Machines, 40"-60".
1—Waldron 4-Color Wallpaper Print Machine.
1—V.V. 10-color Ribbon Print Machine.

TUBERS
5—Tubing & Measuring Machines, 50"-60".
1—Hermas 60" Measuring Machine with Motor.
3—New 60" Beamers.

KETTLES
4—Textile Copper Steam Jacketed Color Kettles, tilting, agitated, 40-150 gallons.

WEAVING MACHINES
24—C & K 92" automatic looms.
13—C & K 82" automatic looms.
10—Draper 79" automatic looms.
52—C & K 52" automatic looms.
24—C & K 4x4 Automatic Tapestry Looms, 64".
30—72" Jacquard Looms, C & K.
60—Crompton & Knowles 92" Woolen Looms.

AGERS
2—Butterworth Cast Iron Agers, 18' & 30' lg., 50-60" wide.

KNITTING MACHINES
150—1" to 21" Circular Knitting Machines.
4—Wildman 23" Ribbers.
2—Grosser Knitting Machines.

PREPARATORY MACHINES
2—Sargent & C & M Burr Pickers.
2—30" Rag Pickers.
1—40" Kitson Pickers.
1—40" Mixing Picker.
1—C & M 40" Fearnaught Picker.
2—Saco Lowell Condensers.
2—Saco Lowell Vertical Openers.
4—Pangborn Dust Collectors.
1—Conical Duster with dust blower.
1—Sargent Cotton Picker.
1—High speed warping creel.
6—Automatic Rag Picker Feeds.

CARDING MACHINES
14—Sets D&F Wool Waste Cards, 48" x 48".
3—Sets D&F Woolen Cards, 48" x 48".
1—Woolen Card, 48" x 60" diameter.
3—Sets D&F Worsted Cards, 60" x 54".
2—Sets D&F Worsted Cards, 60" x 48".
2—Sets D&F Worsted Cards, 54" x 54".
2—Furbush Worsted Cards, 48" x 48".
6—Sargent, Bramwell & Harwood Feeds.
1—Barker Triple Rub 3-bank condenser.
16—Whitin D-2 Combers.
8—Hetherington Silver & Ribbon Lap Machines.
2—3-cylinder 48"x48" Shoddy Cards, equipped with Bramwell Feeds & metallic breasts.
3—Bramwell 60" Card Feeds.

SPINNING & YARN MACHINES
52—Whitin & D&F Spinners, 240-252 spindles 2"-3½" gauge, band driven.
1—D&F Wool Spinner, 4½" gauge.
36—Deliveries H&B Drawing Frames, 12" coilers.
1—J&B 336-spindle Mule.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
1—P-S Ring Twister, 5" band drive.
3—Fletcher Double Deck Winder.
2—Foster #101 Cone Winders.
12—Universal #50 & #90 Winders.
8—Atwood 50-B Spinners.
2—Sipp 72" Warpers.
3—Whitin & Atwood Skein Reelers.
4—Jack Spoolers, complete with creels.
7—H&B Speeders, 5" gauge.
2—Foster #12 Winders.
4—Worsted Spinning Frames.

WATER SOFTENERS
1—Permutit Water Softener, 103" lg. 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8' dia. x 20' long, complete.

FULLING MILLS
2—James Hunter #10 Fulling Mills.

GARNETTS
3—James Smith 3-cylinder Garnetts.
1—P & S Single Cylinder 20x60" Garnett.
1—P & S 2-cylinder 20"x60" Garnett.

BUY AND HOLD MORE WAR BONDS

We buy from
SINGLE ITEMS
to
COMPLETE PLANTS
Send your list of Idle Equipment Now
For War Production Now
To Create Jobs After the War

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY A SYMBOL OF CONFIDENCE

CONSOLIDATED PRODUCTS COMPANY, INC.

Address All Textile Inquiries to

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15 Park Row, New York 7, N. Y. Tel. BArclay 7-0600

AGER, Tower
AGITATOR, Portable High Speed
BEAMER, 60" Van Vlaanderen
CALENDERS, 52" Cavagnaro, 60" K & G
DECATER, Semi C&M 72"x12" dia.
DECATER, Full, Gessner
DRY CANS, 12 Copper 50"x28" vert.
DRY CANS, 14 tinned copper 68"x23" hor.
DRY CANS, 12 Copper 144"x23" vert.
DRYER, Airlay Single Line
2—DRYERS CONVEYOR, 50" face, 4 fan
DRYERS, Net Conveyor, 56" & 60" wide
DRYER, Loop P & S 30'
DYE BECKS, 4', 6', & 8'
DYE BECKS stainless steel 4' to 20'
DYE TUBS, Copper skein, various lengths
EMBOSSER, 54" Textile 2 pair rolls, lever or hydraulic set optional
EXPANDERS, Rubber face, 72"
EXTRACTORS, Beam 50" & 60" BB
EXTRACTOR, Open Top Hercules, 26"
EXTRACTOR, Open Top Tolhurst, 40"
EXTRACTORS, VV copper basket 54"
EXTRACTORS, VV rubber basket 60"
EXTRACTOR, Gessner, Vacuum 72"
FANS, Exhaust, 3 blade propeller, 30"-36"-48"
FLOCK STENCIL MACHINE, with Patterns
FLAT FOLDERS, Elliott & Hall, Adjustable
FULLING MILLS, Hunter #10
INFRA RED units, complete with blowers
INSPECTION TABLES, with DC motors 47"
JIGGS, Cast iron 50" & 60"
JIGGS, Monel lined 60"
MEASURING MACHINE P & W Model AWC
MOTORS, BTA 7½, 12½, 25, 30 HP
MOTORS, over 300 GE ¾ to 5 HP 220V
NAPPERS, double & single act. 66" & 72"
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face General Machine
PRINT MACHINE, 3 color 60"
PRINT MACHINE, 1 color 60"
PRINT MACHINE, 10" sample
QUETCH, 3 roll Morrison 60"
QUETCH, 2 roll Van Vlaanderen
QUETCH, 2 roll, 50" complete
RIBBON FIN. UNIT, complete
RIBBON PRINTING MACHINE, 10 color
SEWING MACHINES, Arlington Bicycle
SEWING MACHINES, Merrow
SHEAR, Hermas 4 Knife 70" wide
SQUEEZE ROLLS, 1 pr 80" on stand
TANK, rubber lined and covered
TENTER FRAME, W & J 30'x50" wide
TIGERS, Dry P&W and C&M
TUBER, with Examining board 80"
TUBER, Paterson Variable speed motor
VEEDER ROOT Counters
WARP COMPRESSOR CREEL
WASHER, GL Rope Type
WASHER, VV 3 compartment
WOOL WASHERS, J. Hunter, 6 and 8 ft.
WATER SOFTENER & FILTERS

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4, N. J.
Sherwood 2-6577

1—#101 Foster Winder, double motor drive, 100 spindles, equipped for paper tubes and Franklin dye springs.
1—Model "G" Barber Colman Portable Tying-in Machine.
1—Model "K" Barber Colman Portable Tying-in Machine.
1—Model 4-E Barber Colman stationary Tying-in Machine.
6—7x3½ Woonsocket Speeders, 160 spindles each.
4—8x4 Woonsocket Speeders, 160 spindles each.
1—Foster 100 spindle motor driven #30 Winder, equipped for tubes and cones.
3M—Twister Spindles, complete with bases, bolsters and knee brakes.
1—Curtis & Marble Shearer, 4 knife, #A-3809-11-33, 1933 Model with Automatic Seam Lifter, without Scray and Motor, for 44" cloth.

TEXTILE SALVAGE COMPANY
P. O. Box 1461 Charlotte 1, N. C.

HARRY STEPHENSON
IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
New and Used
River Works, Andover, Mass.

HOSIERY MACHINES
KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
NEEDLES FOR EXPORT
C. M. FRENCH
Commercial Trust Bldg., Philadelphia 2, Pa.

FOR SALE

BTS

1—40" Tolhurst Extractor, copper basket, belt drive.
10—C&K 92" 4x4 Cashmere Looms.
1—C&M 72" Cloth Cradle.
1—Stur. Blower #30
1—Stur. Multivane Blower, size 5, design 3.
1—C&M 48" Brushing Mach., motor driven, by 5 HP 220 volt motor

Save Time and Money—Cotton, Silk, Woolen and Worsted Mills

We have the largest stock of bobbins & spools and can offer selected stock and are also fully equipped to recondition, re-size or re-enamel your bobbins or spools and re-tip skewers. Send us your samples, we will match them, replying promptly.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

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36" SARGENT MIXING PICKER
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- 86—Crompton & Knowles—600 hook double lift jacquard machines to go with the above Looms
- 40—Crompton & Knowles, 4 x 1, 52" Looms, roller bearing, shock absorber, high pick-wheel, removable cloth rollers individually motor driven, warp stop motions and pick counters
- 16—Crompton & Knowles, 4 x 4, 82" reed space, 25 harness intermediate heads, large shuttle boxes, woolen looms, individually motor driven, complete with 1 HP, 3 phase, 60 cycle, 220 volt motors.
- 10—4 x 4, 72" Crompton & Knowles Worcester looms, roller bearing stock absorber, motor driven, 1 HP, 3 phase motors, oversized shuttle boxes, extended bottom shaft for Jacquards
- 10—4 x 4, 64" Crompton & Knowles Worcester looms, motor driven, extended bottom shafts for Jacquards
- 200 Universal #90 quillers or coppers, with or without bunch builders, belt driven or motor driven
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- 40—78" 2 x 1 Crompton & Knowles looms. Roller bearing, shock absorber 20 harness, intermediate head, individually motor driven, ¾ h.p. motors
- 16—56" 4 x 4 Crompton & Knowles Jacquard looms
- 160—45" reed space, Draper automatic looms, 2 harness, roller motion gooseneck cutters, Roper let-offs, positive feelers, worm take ups
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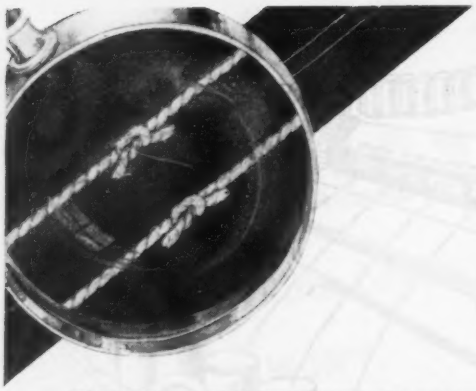

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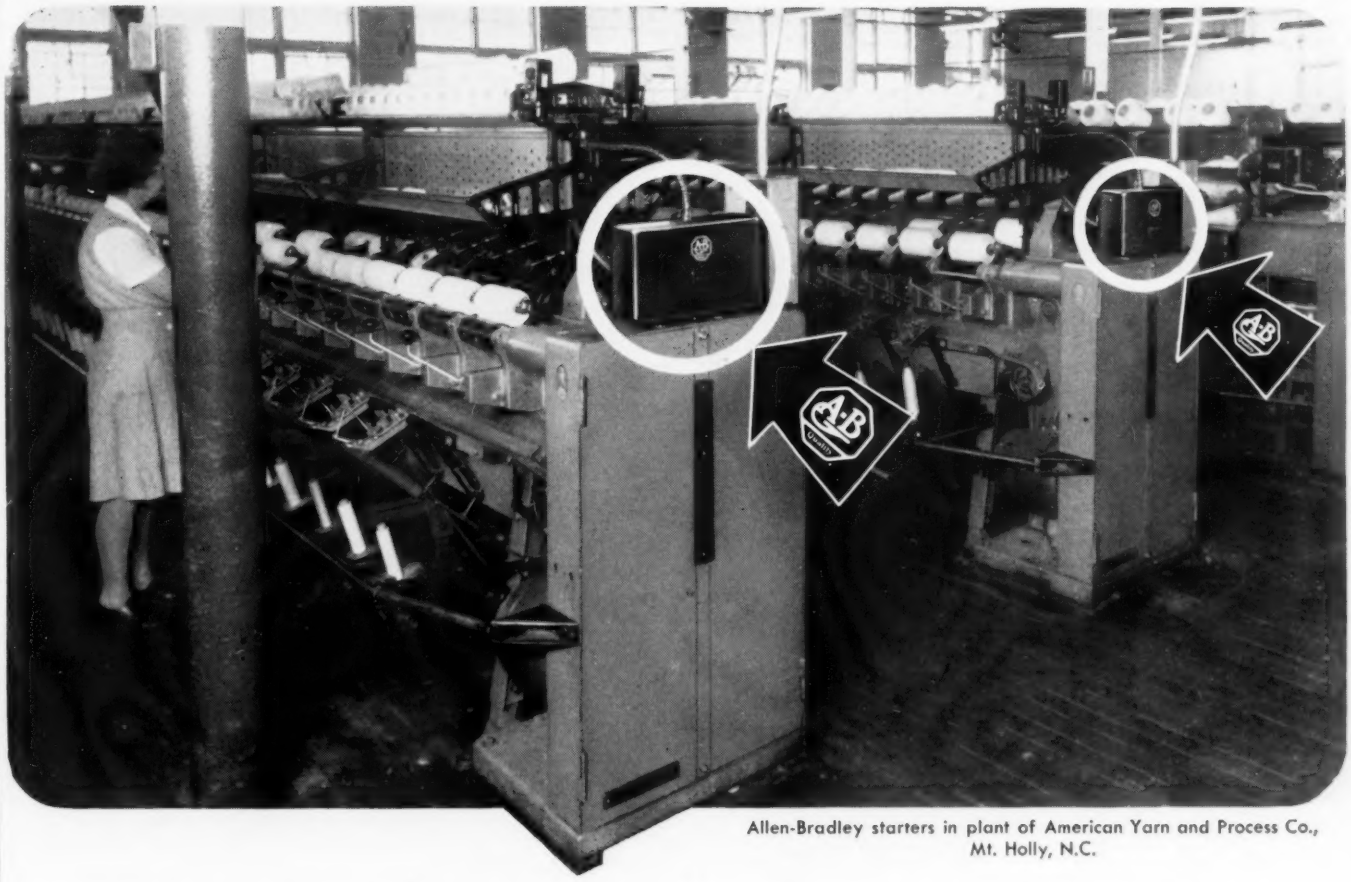

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Standard Push Button

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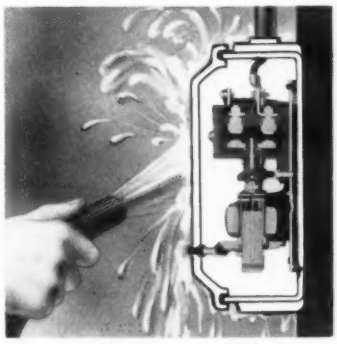

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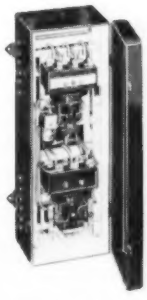

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